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ABSTRACT

This symposium considered major issues in the delivery of physical therapy services to children and their families. The 26 invited participants used a series of formal presentations and small and large group sessions to identify issues, set priorities for action, and develop preliminary recommendations. Formal presentations include: "Issues and Priorities in Pediatric Therapy Research" (Martha Piper); "Issues in Education" (Barbara Connolly); and "The Practice of Physical Therapy with Children, Adolescents and Their Families" (Alice Shea). Group discussions following each presentation are summarized. Several high priority issues in pediatric physical therapy are identified and discussed: manpower shortage, identification of the scientific basis of practice, translation of the scientific basis into practice, measurement, curriculum, spectrum of practice, and communication and coordination of services. Strategies for implementing change in the priority areas are outlined. Several short presentations describe the roles of the following agencies in support of physical therapy in pediatrics: Maternal and Child Health Training of the Bureau of Health Care Delivery and Assistance, U.S. Department of Health and Human Services; United Cerebral Palsy Research and Educational Foundation; and American Physical Therapy Association. An appendix contains a copy of a survey sent to 80 physical therapists concerning their priorities for maternal and child health, along with a summary of results. (JDD)

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PROCEEDINGS OF THE SYMPOSIUM ON PRIORITIES FOR PHYSICAL THERAPY IN MATERNAL AND CHILD HEALTH

Quail Roost Conference Center

Rougemont, NC

January 25 - 28, 1987

Hosted by

Division of Physical Therapy
Department of Medical Allied Health Professions
University of North Carolina at Chapel Hill

Sponsored by

The Division of Maternal and Child Health
Bureau of Health Care Delivery and Assistance
Health Resources and Services Administration
Department of Health and Human Services
U.S. Public Health Service

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SYMPOSIUM ON PRIORITIES FOR PHYSICAL THERAPY

IN MATERNAL AND CHILD HEALTH

Quail Roost Conference Center
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January 25-28, 1987

Conference Co-Chairpersons

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Darlene S. Slaton

Conference Coordinator
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Hosted by

Division of Physical Therapy
Department of Medical Allied Health Professions
University of North Carolina at Chapel Hill

Sponsored by

The Division of Maternal and Child Health
Bureau of Health Care Delivery and Assistance
Health Resources and Services Administration
Department of Health and Human Services
U.S. Public Health Service

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FOREWORD

The purpose of this symposium was to provide an opportunity for leaders in pediatric physical therapy and representatives of the various communities of interest to consider the major issues of current concern relative to the delivery of physical therapy services to children and their families. Twenty-six invited participants representing the national leadership in pediatric physical therapy and related communities of interest met at the Quail Roost Conference Center of the University of North Carolina at Chapel Hill in Rougemont, NC. The symposium was sponsored by Grant 149 from the Bureau of Health and Human Services of the US Public Health Service and was hosted by the Division of Physical Therapy of the University of North Carolina at Chapel Hill. A series of formal presentations and small and large group sessions were used to identify major issues of concern, to set priorities for action and to develop preliminary recommendations for resolving the concerns which were identified.

The three day symposium was characterized by enthusiasm, cooperation and a shared commitment to the delivery of quality physical therapy service. Those physical therapists who participated brought experience and expertise in service delivery and clinical practice, administration and health policy, physical therapy education, and research. Additionally representatives from government agencies, professional associations, funding agencies and other disciplines brought a diversity of perspectives and ideas for discussion.

Seven issues of concern were identified by the participants as major priorities for action. These included manpower, identification of the scientific basis for practice, translation of this scientific basis into practice, measurement, curriculum, identification of the spectrum of pediatric physical therapy practice, and communication and coordination of services. The participants suggested initial recommendations for addressing concerns related to these issues, target groups which might assist in the implementation of these recommendations and individual participants from the symposium who would be willing to coordinate or monitor actions affecting these issues.

Progress toward the implementation of these recommendations will be followed by selected symposium participants over the next year. Many of the recommendations will require the enlistment of the APTA, the Sections on Pediatrics, Education and Administration (APTA), funding agencies and other professional organizations, educational programs in physical therapy, and the symposium participants. A follow up progress report will be prepared in February 1988.

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Welcome and Introduction

Welcome to this Symposium on Priorities for Physical Therapy in Maternal and Child Health. We at the University of North Carolina at Chapel Hill feel highly honored to have been chosen to host this program and are delighted that all of you are here. We have never had an easier time getting people to attend a conference. Even the speakers hardly had to be arm-twisted at all to agree to prepare major issues papers. I believe that this speaks to the tremendous need we all recognize for a symposium such as this, and we are grateful that you have agreed to participate.

Despite the many problems we face as our profession grows and develops, I believe that this is one of the most exciting times in history to be a physical therapist. When I was a young PT, I regretted not having been a therapist in earlier days, when I naively thought all of the action had occurred--the danger and excitement of participating in the war effort, the mobilization of therapists from all over the nation in the fight against polio, and so on. Now, I believe that we are in the most critical period of our history with tremendously exciting, though difficult challenges. I see physical therapy becoming more professional, more independent, yet ever more willing to become a part of both the total health care team and the educational community. We are improving our education, gradually building a body of scientific knowledge that is uniquely ours, and serving our clients better. We need, however, to continue to address these issues, and to become more public-health oriented; take more leadership in teaching and promoting physical fitness, injury prevention, and creation of good environments for the optimal development of our nation's children; and become better advocates for children, the disadvantaged, rural and the other clients we serve.

The purpose of this conference is to develop priorities for action that relate to the interests and responsibilities of physical therapy in the area of maternal and child health. We have invited a group of exciting speakers to present issues papers to stimulate our thought, pulled together an impressive group of therapists and consultants to share their expertise in developing a list of priorities, and, then, of most importance, to prepare a list of strategies for actualizing our goals.

We are very proud of the group we've been able to put together. We hope you enjoy the interactions and the lovely setting. We want you to forcefully present your own ideas, argue for your favorite priorities, but also listen to the expertise and ideas of others and ultimately come to a consensus about the most urgent priorities and the best strategies for achieving the goals. The final take-home message is that we hope your experience here will fill you with the commitment to devote your own time and energies to working on those priorities that you can best address in your own sphere of activity. Welcome and thank you for coming.

Suzann K. Campbell
Co-Chairperson

Executive Summary

The purpose of this symposium was to provide an opportunity for leaders in pediatric physical therapy and representation of the various communities of interest to consider the major issues of current concern relative to the delivery of physical therapy services to children and their families. Twenty-six invited participants (see attachment A) representing the national leadership in pediatric physical therapy and related communities of interest met at the Quail Roost Conference Center of the University of North Carolina at Chapel Hill in Rougemont, NC. The symposium was sponsored by Grant 149 from the Bureau of Health and Human Services of the US Public Health Service and was hosted by the Division of Physical Therapy of the University of North Carolina at Chapel Hill. A series of formal presentations and small and large group sessions were used to identify major issues of concern, to set priorities for action and to develop preliminary recommendations for resolving the concerns which were identified.

The three day symposium was characterized by enthusiasm, cooperation and a shared commitment to the delivery of quality physical therapy service. Those physical therapists who participated brought experience and expertise in service delivery and clinical practice, administration and health policy, physical therapy education, and research. Additionally representatives from government agencies, professional associations, funding agencies and other disciplines brought a diversity of perspectives and ideas for discussion.

Seven issues of concern were identified by the participants as major priorities for action. These included manpower, curriculum, communication, expansion of the scientific basis for practice, translation of this scientific basis into practice, measurement, and the identification of the spectrum of pediatric physical therapy practice. The participants suggested initial recommendations for addressing concerns related to these issues, target groups which might assist in the implementation of these recommendations and individual participants from the symposium who would be willing to coordinate or monitor actions affecting these issues.

Manpower - The critical shortage of physical therapists in all areas and levels of practice was emphasized throughout the symposium. Clinicians, faculty, researchers and administrators are all affected by this shortage. Recommendations included:

1. Re-evaluation of admission requirements for physical therapy programs to assure that potential therapists with special talents for research or administration are not being selectively screened out.

2. Encourage expansion of student body at all levels of physical therapy education - entry, advanced masters and doctoral programs.

3. Marketing of education, research and administrative roles as positive career options.

4. Support for continuing and advanced degree education for therapists in all four areas, - practice, research, education and administration.

Curriculum - The major issues related to physical therapy curriculum were associated with the pediatric content of the curriculum, the competence of individuals teaching the pediatric portion of the curriculum and the affect of pediatric role models on students. Suggestions included:

1. Systematic re-evaluation of entry-level competencies in pediatrics every 5 years.

2. Integration and expansion of pediatric content into all areas of the physical therapy entry level curriculum.

3. Networking and collaboration among pediatric faculty to encourage cooperative sharing of teaching and research skills, supplemented by use of expert clinicians in local areas.

Communication - Encompassed in the area of communication was a concern for the coordination of service delivery. When communication is ineffective poor coordination of services results in duplication and or inadequate service. This priority also relates to interdisciplinary coordination of services and to oral and written communication skill of therapists.

1. Comprehensive continuing education planning for enhansing communication/interdisciplinary coordinating skills of therapists

2. Adopt case management model of service delivery.

3. Encourage interaction among therapists, government agencies, and advocacy groups with common concerns for children and families.

4. Develop innovative curricula which incorporate interdisciplinary case management models and skills in formal and informal written and oral communication.

Expanding the Scientific Basis of Practice - This priority encompasses both theory development and research and reflects the need for support for research efforts in physical therapy to document the scientific basis and efficacy of our practice. In addition to the development of expanded funding sources for pediatric research, the following suggestions were made:

1. Acknowledge research as a high priority.

2. Structure conference programs sponsored by the American Physical Therapy Association (APTA) such that research presentations are scheduled unopposed by other events.

3. Encourage coordinated efforts by the research committies of the Section on Pediatrics of APTA and the Neurodevelopmental Treatment Association (NDT).

4. Support APTA's research program and the Foundation for Physical Therapy.

5. Continuing education and advanced degree education for therapists interested in research.

Translation of Research and Theory into Practice - The development of research and theory supporting clinical practice is meaningless unless translated into service delivery. The utilization of information gained through research by practitioners often lags behind. In order to facilitate the utilization of new knowledge, the following recommendations were made:

1. Encouragement of local journal clubs.

2. Cooperative exchanges between education programs and clinical settings.

3. Emphasis on continuing education programs which emphasize the application of new knowledge to practice.

4. Consider use of a library consultant to facilitate dissemination of information to practicing clinicians.

Measurement - A critical need of both researchers and clinicians is the development of standardized assessment tools and data base management.

1. Development of protocols for evaluation and measurement of clinical outcomes in common pediatric disabilities.

2. Recognition of the authors of the Motor Assessment of Infants for their contribution to the profession and encouragement if further development of this assessment tool.

3. Support for the development of standardized measurement tools.

Delineation of the Spectrum of Pediatric Physical Therapy Practice - The need for a common understanding of the scope of pediatric physical therapy practice, defining its unique contributions as well as those areas of practice which may overlap with other professions, was consistently recognized throughout the symposium.

1. Develop a written statement describing pediatric physical therapy practice based upon recent information collected through surveys by the Section on Pediatrics and the Pediatric Specialty Council.

2. Open dialogue with related professional and interdisciplinary organizations.

Progress toward the implementation of these recommendations will be followed by selected symposium participants over the next year. Many of the recommendations will require the enlistment of the APTA, the Sections on Pediatrics, Education and Administration (APTA), funding agencies and other professional organizations, educational programs in physical therapy, and the symposium participants. A follow up progress report will be prepared in the Spring of 1988.

FORMAL PRESENTATIONS

Research

Education

Practice

Administration

ISSUES AND PRIORITIES IN PEDIATRIC THERAPY RESEARCH

Martha C. Piper, Ph.D.

In preparation of this presentation, I thought it might be useful to have a model to assist us in our search for priorities in physical therapy research in maternal and child health. Because this was such a large area to address and consider, I believed that if I could organize my thoughts within a simple conceptual framework, the priorities would appear automatically. Let it suffice to say, that the development of the model or conceptual framework proved to be a more difficult task than I first anticipated, and I am still uncertain how useful it will be in our deliberations, but would like to share it with you at this time.

In considering a framework for research priorities, I considered several classic models that are often used in terms of conceptualizing handicapping conditions, such as a 1) primary, secondary and tertiary prevention model; 2) chronological model (preconception, prenatal, neonatal and developmental periods); and 3) basic versus applied research model. While each of these models has attractive features, I did not believe that any one of them captured the essence of pediatric physical therapy research. Rather, the model that I have chosen to share with you this evening deals with the three clinical goals of physical therapy in the area of pediatric handicapping conditions: the Prevention of the handicapping condition, the Detection of the handicapping condition, and the Amelioration of the handicapping condition.

CLINICAL GOALS OF PEDIATRIC PHYSICAL THERAPY

1. PREVENTION
2. DETECTION
3. AMELIORATION

For each of these goals I have expanded the model to include two other sections: the components of each goal and the general types of research associated with each component.

Table 1

MODEL OF PEDIATRIC PHYSICAL THERAPY RESEARCH

GOAL	COMPONENTS OF GOAL	TYPES OF RESEARCH
1. Prevention of handicaps	1.1 Frequency of Condition 1.2 Causative Factors 1.3 Efficacy of Prevention Programs	1.1 Epidemiology 1.2 Basic Science 1.3 Evaluative
2. Detection of handicaps	2.1 Factors Associated with condition 2.2 Measurement of Factors 2.3 Sensitivity and Specificity of Measures	2.1 Epidemiology/ Basic Science 2.2 Measurement 2.3 Screening/ Evaluative
3. Amelioration of handicaps	3.1 Theoretical Models for Treatment 3.2 Selection of Outcome Parameters 3.3 Efficacy of Treatment	3.1 Basic Science 3.2 Measurement 3.3 Evaluative

For example, in order to achieve the goal of prevention, we must know both the frequency of the condition in terms of its incidence and prevalence as well as some information about the casuative factor(s) of the condition before we are able to establish and evaluate a prevention program for the condition. In the area of neuromotor disorders the most obvious example of this research sequence deals with cerebral palsy. The most recent epidemiological research investigations are providing information that suggests that 1) the incidence of the disorder is most probably not declining even with enhanced prenatal and neonatal care, and 2) some of the earlier perceived causes of this disorder may indeed be wrong (Nelson and Ellenberg, 1985: Paneth, 1986). Needless to say, any prevention programs developed by therapists to prevent neuromotor handicapping conditions should be directed towards the casuative factors of the disorder.

Therapists have become increasingly interested in the detection of the factors associated with the occurrence of handicapping conditions. Research is required to 1) delineate the factors or symptoms that are associated with the handicapping condition, 2) develop measures and instruments that measure these factors, and 3) evaluate the actual accuracy of the measures employed in terms of differentiating persons who eventually manifest the handicapping condition from those who are unaffected. An example of this type of sequential research is the recent emphasis on detection of abnormal tone, e.g. neck hypertonus or shoulder retraction, as an early indicator in the neonate of later neuromotor disorders (Ellenberg and Nelson, 1981; Georgieff et al., 1986; Georgieff and Bernbaum, 1986). The first issue that must be addressed is whether neck hypertonus or shoulder retraction is indeed an indicator of cerebral palsy and if so

how will we accurately measure it. Once we are able to measure it, we must then evaluate our screening measures in order to ensure that we are indeed successfully detecting those children who will later manifest the handicapping condition.

Tradititonally, physical therapists have been most concerned with remediating or ameliorating pre-existing handicapping conditions. Over the years treatment approaches for the motorically disabled child have evolved with little attention or concern for the theoretical basis of the approach. Rather, many of our treatment approaches have been empirically based. Clearly it is time for us to develop treatment approaches based on scientific and theoretical models. Once the theoretical constructs are in place, we will be able to determine what parameters are more likely to be affected by treatment, and then evaluate the efficacy of treatment by measuring the change in those identified parameters.

If we accept this model as an appropriate framework for generating research priorities in pediatric physical therapy, we are then able to look at the three goals and the components of each of these goals and determine if there is a role for physical therapy research within the components. I think it is important, however, to establish some boundaries in terms of the research focus. I have arbitrarily limited the priorities to the area of motor handicaps. While I realize that physical therapists play an essential role in the prevention, detection and amelioration of other handicapping conditions within pediatric populations, e.g. cardiorespiratory disorders, I believe that the primary focus of physical therapy has been in the area of motor development and motor behavior.

Prevention

Frequency of Condition. Although I recognize the importance of monitoring the incidence and prevalence of specific motor handicapping conditions, I believe that this type of research can be conducted by epidemiologists. I would, however, rate this type of research as a high priority in the general area of maternal and child health and would urge all pediatric physical therapy researchers to remain informed and up-to-date in terms of the information available in this critical area, since I believe that it will provide us with important data regarding both causative factors and the impact of preventive programs.

Causative Factors of Motor Handicapping Conditions. Physical therapists have not played a strong role in the area of investigating the causes of the motor handicapping conditions that they are called upon to treat. I do believe that there are now basic questions being raised with regard to the causative factors of neuromotor disorders that should be addressed by physical therapy research. These questions include the following:

1. Do neuromotor disorders result from insults surrounding birth or are they present *in utero* prior to birth?

2. Are preterm infants "normal" infants who are born too soon or are they "different" from full-term infants even prior to birth?

3. Does the extrauterine environment affect the neuromotor development of the infant or is motor development preprogrammed and/or genetically determined and thus, essentially unaffected by environment?

In order to address these questions the following questions need to be asked:

1. Can fetal and neonatal movement be quantified and assessed?

2. If so, can we detect the fetuses who will be born too early, or the fetuses or newborns who will have motor handicaps?

Efficacy of Prevention Programs. Once we have answers to these questions, we can evaluate the efficacy of relevant prevention programs, such as:

1. Can we prevent preterm birth or prevent aberrant motor patterns in utero through prenatal therapy programs?

2. Can we prevent or minimize neuromotor disorders by positional support programs or other means of intervention in the newborn period?

Detection

A great deal of time and effort on the part of many health professionals, e.g., neurologists, pediatricians, psychologists and educators, has been directed towards detecting those infants or children who are likely to exhibit a motor handicap later in life. This activity is largely based on the assumption that early identification can lead to early intervention and that early intervention can indeed remediate or ameliorate later dysfunction. I am not going to dwell on these assumptions at this time. If we accept the premise that early detection is benefical to the children and families involved, it is useful to consider the role of physical therapy research in the whole area of screening.

Physical therapists have just recently begun to bring their unique expertise to screening for neuromotor disorders. In my opinion this is a healthy situation and one that should be encouraged. The research priorities in the area of detection could be considered once again in terms of the components of the goal as listed in our model.

Factors Associated with the Condition. Therapists are in the enviable position of having a unique body of knowledge dealing with motor development and a great deal of empirical/observation information about the evolution of neuromotor disorders. While a variety of screening measures have been developed to assess the behavioral systems and neurological status of the infant, very little work to date has taken place in terms of assessing the aspects of motor development that therapists consistently suspect as being the precursors to more obvious symptoms of motor disorders, e.g. tone, spontaneous or freedom of movement, "blocking" or "fixation" of proximal joints, abnormal patterns of movement, such as hyperextension of the neck or retraction of the scapula, to name a few. For these reasons, I would set as a research priority the following question:

1. How do neuromotor disorders evolve and what are the "early" signs or symptoms of these disorders?

This is not a new question. In my opinion, what is new is not the question but rather how we should go about answering it. A prospective study with an

adequate sample size should be mounted to monitor and describe the evolution and/or resolution of motor disorders. Nelson and Ellenberg (1982) have documented in a classic epidemiological investigation that abnormal motor signs in young children may subsequently normalize with maturation. What was lacking in this important piece of work, from a physical therapist's perspective, was careful description of the evolution of motor behaviors and a rigorus monitoring of early signs and symptoms. Too often, retrospective analyses have been performed on data to answer this question. Retrospective analyses can be very misleading. Simply put, because many disabled children exhibited retraction of the scapula (retrospective) does not necessarily mean that the majority of infants who display retraction will become disabled (prospectively).

Detection of Factors. Once the design has been established, appropriate and valid measures must be available to measure accurately the factors of interest. The issue of measurement runs throughout the three goals--prevention, detection and amelioration. Once again, while this is not a new issue, I believe that physical therapists have historically relied on essentially one approach to measurement, that being, observation. While this makes intuitive sense due to our clinical background and expertise, I do believe that given our increasing sophistication within research we need to start incorporating other forms of measurement. For example, can tone be measured more objectively and reliably by assessing force or strength or velocity than by rating it subjectively as being "hyper" or "hypo"? Truly the challenge facing pediatric research therapists is to combine our intuitive and observational skills with those measurement techniques established in the areas of biomechanics, neurophysiology, muscle physiology, and kinesiology to name a few.

Sensitivity and Specificity of Measures. The sensitivity of a screening measure, i.e., the ability of the test to detect an individual with the handicap, and the specificity of a screening measure, i.e., the ability of the test to classify an individual as being handicap free, provide important information about the accuracy of any screening tool. The level of sensitivity and specificity of a screening test have an inverse relationship. Often screening devices achieve high sensitivity at the expense of a high false positive rate. That is to say, the test is extremely accurate in terms of detecting all the individuals who eventually manifest the handicap, but in the process classifies a large of number of unaffected children as being affected. Traditionally, therapists have assumed that if a test is to err, it would be better to err in the direction of a high false positive rate since none of the affected children would be missed. This assumption has never been carefully tested in terms of motor handicaps, but recent evidence with learning problems suggests that a false label early in a child's life can be detrimental to the child's long-term development (Cadman et al., 1986). Clearly, if we are to assume a role in the detection of handicaps, we must also be responsive in terms of carefully evaluating our screening tools.

Amelioration

Physical therapists have long been associated with the amelioration of motor handicaps once they have been diagnosed. Similarly, amelioration has often been identified as an important area for research in pediatric physical therapy. The broad issue is well known to all of us -- Does physical therapy affect the motor functioning of handicapped infants and children? While the importance of this question should not be minimized, I do think that we need to break the question

into smaller segments in order to begin to address it adequately. For this purpose I would suggest that we return to our model and the three components of the Amelioration goal.

Theoretical Models for Treatment. A high priority for research in pediatric physical therapy must be the development of sound, scientifically based theoretical models upon which to base treatment approaches. Basic research, both animal and human, is required in the following areas:

1. Neurobiology research in terms of recovery of function following insults to the central nervous system.

2. Neurophysiology and motor control research (including kinesiology and biomechanical properties of movement) in terms of the necessary components of normal motor development and motor functioning.

3. Neuropsychology research in terms of motor learning and the essential components for the recovery of motor processes following brain injury.

4. Biomedical engineering research in terms of developing assistive technology and adaptive equipment.

In my opinion, physical therapy researchers should be engaging in basic science research that will ultimately provide us with the necessary knowledge and theoretical foundation to develop appropriate intervention techniques. University programs in physical therapy must be prepared to support and foster this type of research that often requires interdisciplinary input and collaboration with a variety of scientific disciplines.

Selection of Outcome Parameters. Following the development of a theoretical framework for treatment, physical therapy research must identify those parameters most likely to be affected by treatment and then develop, once again, reliable and valid measures to evaluate change in those parameters. The overall goal is to have research instruments that are valid, reliable, and responsive to detecting clinically important change in motor behavior. What is it that we do? How do we think we affect the children and families we treat? Some of the parameters that I think deserve research consideration that have not been carefully addressed in the past include:

1. Function (quantity of motor activity) versus Performance (quality of motor activity).

    a. Domains of gross motor performance include: 1) body alignment and patterns of movement, e.g., descriptors of posture and movement including trunk rotation, neck extension and hip flexion, 2) movement characteristics, e.g., speed, endurance and ease of movement, and 3) control characteristics, e.g., stability, weight bearing, or cocontraction during static or dynamic activities.

2. Energy consumption or energy conservation associated with movement.

3. Independence in mobility.

4. Adaptation to motor limitations.

Efficacy of Treatment. Researchers within the field of pediatric physical therapy are beginning to conduct carefully controlled efficacy studies of specific treatment approaches with handicapped children. While these efforts should all be applauded and nurtured, I would like to suggest that some of the very basic assumptions underlying all treatment for children with motor handicaps have yet to be tested. In my opinion, the testing of these assumptions should be a priority as part of evaluating the impact of treatment. Some of these assumptions include:

1. Early is better than late, or the earlier the better.

2. More treatment is better that less treatment, or if a little works than a lot will be even better.

3. While treatment may not be efficacious, it at least can not be harmful.

4. Parents can be taught to "treat" their child and home programs should be a part of all treatment plans.

5. Treatment will affect all children with similar handicapping conditions in a similar way.

Another way of looking at these assumptions is to develop appropriate research questions addressing the issues of timing, frequency, compliance and subject characteristics.

1. Is there a critical period in the developmental process at which to intervene which may or may not be in the "early" months of life?

2. What is the optimal frequency and/or intensity of treatment?

3. Can treatment in some instances do more harm than good?

4. Can parents really be taught to be "physical therapists" via home programs? If frequent treatments are required should those treatments be given by qualified therapists?

5. Does the quality of parenting/home environment have an impact on motor development?

6. Is there a select group of infants who are more likely to benefit from physical therapy than another group of infants? If so, who are they and what are the important patient variables?

In addition to these assumptions, I do believe there is another major priority within the area of evaluative pediatric physical therapy research. To my knowledge, the physical therapy profession has not yet conducted a collaborative study to evaluate the impact of any of their treatment approaches. I do believe that it is time to mount a national/international collaborative study that addresses the efficacy question as it pertains to the infant/child with neuromotor disorders. Given the incidence of these disorders and the many intervening variables, along with the many potential outcomes, I believe that we are in need of a large representative sample in order to rigorously address the question of whether early physical therapy either prevents or remediates motor

handicaps. Having said this, I would stipulate, however, that prior to any major collaborative study being mounted, the first two components of this goal--development of a theoretical model and the development of appropriate assessment measures--be accomplished.

Summary

In summary, I do think there are some common research themes running throughout our three clinical goals of prevention, detection and amelioration that will help us in summarizing the research priorities in pediatric physical therapy. Clearly, there are three broad research areas identified as being essential to the advancement of knowledge through scientific inquiry. First there is a strong requirement for continued efforts in the basic science arenas to develop the theoretical frameworks within the areas of prevention (causative factors), detection (associated factors) and amelioration (basis for therapeutic approaches). Second, we must continue to develop measures that are sensitive, reliable and valid in terms of the parameters that we want to evaluate. Third, we must develop innovative evaluation protocols that not only examine the question of efficacy but also test some of the basic tenets of treatment.

In closing, I would also like to comment on the priorities from the point of view of research strategies. I believe that pediatric physical therapy research is unique in several ways which affect the research methodology to be employed. First, the handicapping conditions that we treat clinically and are concerned with are relatively rare, so that any one facility or agency will generally have relatively small patient populations to study when conducting research investigations. Second, because we are dealing with children, the issue of growth and development over time, i.e., the natural progression or resolution of symptoms due to maturation, becomes an important concern. Third, we are beginning to appreciate that motor behavior is a complex phenomenon that involves many subsystems including, biomechanical, neurological, physiological, behavioral, genetics, sociological and psychological. Because of this, the study of motor development or behavior can not be done in isolation of one system from the others. Due to these three unique characteristics of pediatric physical therapy research, I would like to advocate the following three research strategies:

1. Collaborative investigations should be given serious consideration to ensure large enough populations to control for the many intervening variables.

2. Longitudinal, prospective studies should be supported to ensure appropriate follow-up and monitoring of the "maturational" effect.

3. Interdisciplinary studies should be supported to ensure that motor behavior is examined in terms of the many interacting developmental systems.

In closing, I am grateful to have been given the opportunity to share with you this evening some of my personal thoughts about research efforts within pediatric physical therapy. It has been a complex task which has allowed me to clarify my own thinking in this area--for that I thank you.

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Group Discussion of Issues in Research

The group discussion of research issues focused on a number of the areas brought up by Dr. Piper:

1. Financing Research: Will society support (fund) studies of the efficacy of treatment given the relative rarity of the conditions with which physical therapy is concerned, or will it prefer to support service (treatment) programs? Several responses to that question were forthcoming:

    a. The conditions are rare at any one location, but the incidence is fairly high overall. In terms of the cost to society, I think you can justify efficacy studies.
    b. Efficacy studies are needed in order to justify funding for service programs.
    c. If efficacy studies are done, we must be willing to accept the results even if they are contrary to our beliefs.
    d. Efficacy studies may demonstrate more benefits to the family and the professional than to the child.
    e. Funds should be available if the studies are of good quality. Physical and occupational therapy research is a priority with governmental agencies, but they are not getting enough good projects.
    f. What are the costs and benefits of physical therapy?

2. Collaborative Research: Because of some of the problems associated with the Collaborative Perinatal Project (CPP) should we still consider conducting collaborative research? Responses were:

    a. Some of the problems with the CPP are that the data are old (collected before monitoring, rubella immunizations, etc.), sample was not randomly selected and some data have never been analyzed. The tremendous cost of the project has not been justified by the results.
    b. Collaborative research needs to be a tight effort and perhaps narrower in focus. Sample size can be gradually increased by long-term studies adding cases over the years.
    c. We need to look, in collaborative studies, at already existing problems, rather than "at risk" children.
    d. We have probably had enough small clinical trials. We need now to go beyond those.

3. Descriptive Research:

    a. We now have more sophistication in research design, statistics, and methodology, but we still lack basic descriptive data about the populations (eg, cerebral palsy) that we treat. We don't have a broad data bank of information about abnormal populations.
    b. Maybe we need to go back and re-read some of the classics (eg, McGraw, Touwen, Freud). We have good, empirical, observational descriptions of normal motor development and some of these people also described abnormal development. (eg, Freud, Touwen).
    c. We lack quantitative data (eg, range of motion, growth parameters).

4. Critical Periods:

   a. There may be critical periods when intervention could be detrimental physiologically, emotionally, psychologically.
   b. Whenever we intervene or draw attention to a child's problem we may be doing something to the mother's perception of the child and we may affect what the mother expects of the child. We have never rigorously examined this.

5. Theoretical Models: How are these developed?

   a. The models come from looking first at what we are trying to do (eg, increase range of motion), then at the basis for whatever we could develop to do that. Only then do we decide how to go about it (eg, by stretching or icing, or stimulating). It makes no sense to just apply a technique with no basis for it.
   b. Scientific basis for PT is increasing rapidly as evidenced by the increased numbers of research papers at conferences and in publications, including theory papers.
   c. We still need to get our clinicians and researchers together.

ISSUES IN EDUCATION

Barbara H. Connolly Ed.D., PT

Before examining issues in education that apply specifically to the area of pediatrics, I feel that we need to examine the purposes of a general professional education for the physical therapy student. We want programs that will enable the student to acquire the knowledge, skills, values, and attitudes that all physical therapists should have. The curriculums are expected to emphasize the values and attitudes that promote caring and concern for individuals and for the society; to build upon the concepts and principles derived from the natural sciences, the social sciences, and the humanities; and to stimulate interest in scientific inquiry. Although there are standards for accreditation of educational programs in physical therapy, the manner in which these standards and the above named purposes are reached vary from institution to institution. The standards typically relate more to the terminal competencies of the students and not to the process by which the competencies are developed. Each educational program is a unique entity and the faculty of each program develop their own philosophy of education or the rationale for the program. This philosophy then guides all other aspects of the curriculum including the teaching and learning processes.

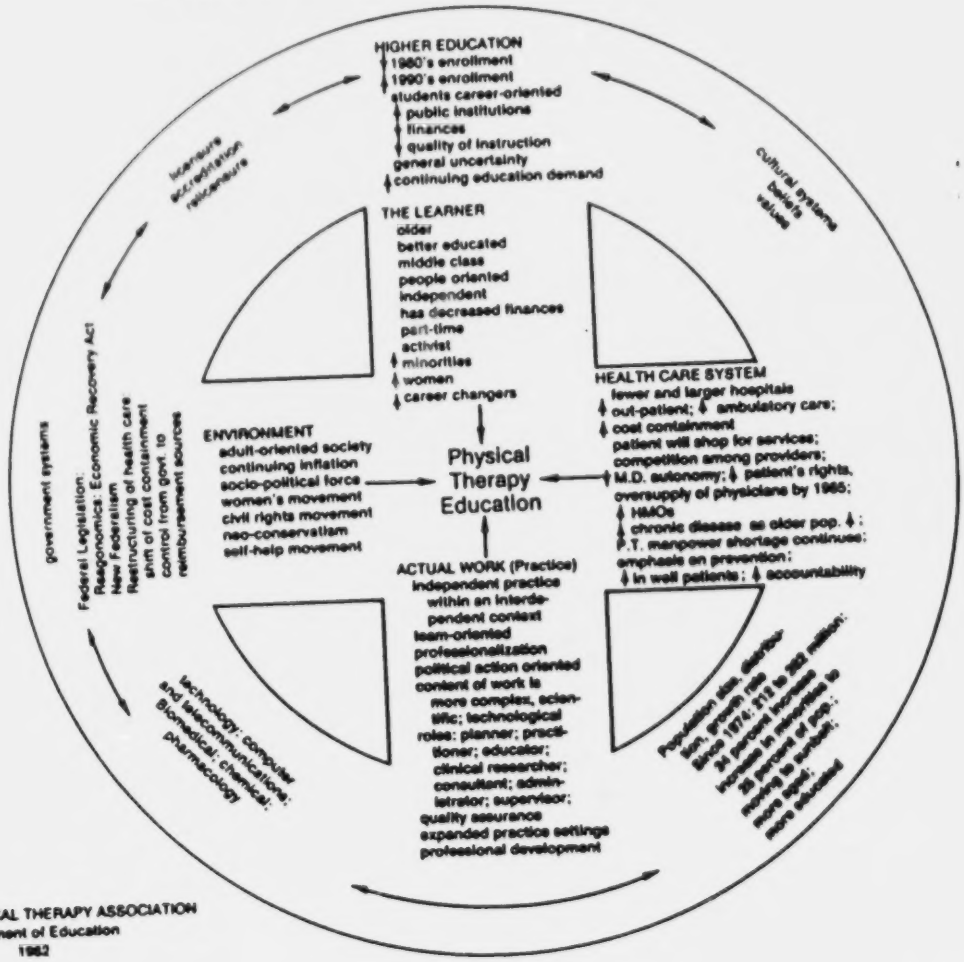
Factors that influence the aims, content, duration, and accomplishments of physical therapy education include but are not limited to the philosophy of the educational program. The practice of physical therapy, the body of knowledge of physical therapy, and the environment of the physical therapy educational program are other factors.[1] Figure 1 illustrates in detail the trends and forces that affect physical therapy education and ultimately the specialty area of pediatrics within physical therapy.[2]

Higher Education and the Learner

Enrollment in institutions in general remained steady during the first half of the 1980's instead of decreasing as had been projected. Enrollment in the 1990's continues to be expected to increase. In physical therapy programs, the total enrollment is increasing and the numbers graduating each year are increasing by 300 to 400 per year. The physical therapy applicant pool also continues to increase with the postbaccalaureate programs showing 9 percent more applicants than baccalaureate programs.[3]

FIGURE 1

Trends and Forces Affecting Physical Therapy Education



AMERICAN PHYSICAL THERAPY ASSOCIATION
Department of Education
1982

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The type of student applying for the physical therapy programs appears to be changing. A prediction is that the prospective student in physical therapy will be older, more educated, more independent, and more willing to make a life long commitment to a career. More men may be attracted to the field because of an excess of dentists, physicians and lawyers. We have an intuition about these trends but we need more information about our applicant pool. An objective for the American Physical Therapy Association for 1987 is to plan a study to describe the applicant pool and enrolled students in physical therapy education programs and then to implement the plan in 1988. This survey should provide us with adequate information for making any necessary changes in the curriculums if indeed a new "type" of student will be applying.

Criteria for admission to the educational programs is an area that has stimulated much interest. At present, different institutions use a variety of formulas in the selection process. Generally, transcripts of all previous college work, standardized test scores, letters of reference, written statements from the student regarding career goals, summaries of previous and related work experiences and personal interviews may be used in the decision making process. But, are we getting the type of student we want for the future? Are we attracting the researchers or educators of tomorrow OR are we selecting primarily those students with a clinical interest? Perhaps we need to re-examine our admissions criteria and determine how we might satisfy the administrative, educative, research and practice needs of our profession.

Transition to postbaccalaureate degree entry level programs is another area that has and will continue to cause uncertainty within the educational programs. As of June 1986, only 14 of the 117 entry level educational programs were at the master's level. A survey by the Department of Education of the APTA, however, revealed that 57 percent of academic administrators of the baccalaureate or certificate programs feel that they will make the transition by 1990.[3] The speed at which the programs are making the transition to the postbaccalaureate entry level is hampered by numerous factors including resistance from administration at the Dean, Chancellor or President level as well as resistance from State Educational bodies. Dialogue continues, however, with these persons as well as other bodies external to the physical therapy community and we as a profession are continuing to move ahead with our intent to affect our entry level education. The impact of this change in entry level education in the area of pediatrics cannot yet be assessed. New standards for accreditation are presently being circulated and public hearings will be held during 1987. The outcome of these hearings and the resulting Standards for Accreditation of Educational Programs in Physical Therapy passed by the APTA House of Delegates will certainly have an effect on the curricular patterns of educational programs after 1988 and we must begin to evaluate how the area of pediatrics will be taught in these curriculums. We want to assure that the graduates are well prepared in the area of pediatrics, not just minimally prepared.

Cost of Education

The cost of education has continued to increase steadily and this trend is expected to continue, however, financial aid for students has not kept pace with this rising cost. Alternative methods of funding for students should be sought and developed. Many hospitals and other health care facilities are now offering scholarships to students with repayment occuring with employment of the student at that facility after graduation. More financial aid to students

interested in pediatrics would assure increased employment in that area at least immediately after the student's graduation.

Cost of education must also include how the physical therapy program is funded. Funding of physical therapy educational programs has been unlike the funding of other health professional schools which have funding from patient care and research. More educational programs are beginning faculty practices which allow additional funding from patient care but this practice is still in its infancy. The latest statistics reveal that research funding as a source of financing for physical therapy education is low with only 37 percent of physical therapy programs receiving grant support.[3] Faculty roles, however, are now changing to include research and practice with 69 percent of the PT faculties engaged in clinical practice and 59 percent involved in conducting research.[3] In addition to increasing funding of the program by involvement in practice and in research, this participation by faculty members increases their recognition as a true academic who contributes to the profession's body of knowledge and who demonstrates the usefulness of that body of knowledge. As we look to the future of physical therapy, we must acknowledge our needs of increasing funding and allowing ourselves to grow either in allied health units in universities or as free standing schools.

Faculty

Another critical issue in the physical therapy educational environment is the shortage of faculty and the inadequate number of faculty members qualified to teach, and to conduct and publish research.[4] Recent studies at the Center for Studies in Health Policy, Inc. revealed that a minimum faculty size of six is needed if theory and research as well as the specialty areas within physical therapy are adequately covered. This includes faculty members with expertise in cardiopulmonary, orthopedics, pediatrics, geriatrics, neurology, clinical electrophysiology and kinesiology. Given this minimum, a total of 702 faculty members are needed for the existing programs but with only 654 currently employed. These numbers do not address the future needs for faculty that will be created by developing physical therapy programs nor does it address future faculty attrition. A survey of faculty members in 1984 revealed that only sixty five percent of the current faculty members intended to remain in academia.[5] These factors cause us to ask "Where are the teachers?" We need to answer the following questions if we indeed want to know from where we will recruit "the teachers":

(1) How will we identify those students who may be the teachers of tomorrow?

(2) What is the appropriate level of academic preparation for the faculty (masters vs doctorate)?

(3) Will we use creative ways to utilize the unemployed and underemployed individuals from other disciplines who hold doctoral degrees?

(4) How can we use the "expert" clinician in the classroom as a part of the "didactic" portion of the educational program?

In addition to an overall critical shortage of physical therapy educators, there appears to be a shortage of physical therapists teaching the pediatric

portions of the various curriculums. In a recent informal survey of academic administrators, a large percentage of the programs do not appear to have a full time or part time faculty member responsible for the teaching of the courses related to pediatrics. Instead, many programs use adjunct faculty, either community based physical therapists or faculty from other universities. This method of providing instruction meets the goal of sharing necessary information with the students but is it the most EFFECTIVE method? This staffing plan does not allow for the ongoing nurturing of students in the area of pediatric practice and may not provide adequate "professional modeling". If we hope to recruit students into pediatrics, we must provide an entry level program that provides the appropriate course contents and adequate role modeling.

If we want faculty members who can present the necessary information to students and who provide the necessary role modeling, we must prepare these people through advanced academic or clinical training. More programs for advanced training in pediatrics need to be developed, or those programs currently available need to be expanded. Sources of financial aid for those clinicians who wish to pursue an advanced degree need to be expanded and amounts available increased. In the past few years, less rather than more money appears to have been available for advanced education. This trend must change if we are to find the faculty for our entry level programs.

One of the goals of the American Physical Therapy Association (APTA) for 1987 is to pursue a federal legislative initiative to secure additional and continuing funding for physical therapy doctoral programs and graduate students. If these funds are generated, the targeted population is students in doctoral programs, however, we also need to pursue funds from sources such as the Foundation for Physical Therapy, Maternal and Child Health and private organizations for the clinician who wishes to pursue a masters degree in preparation for a specialty area.

Development of the clinical specialist in pediatrics remains a viable means of increasing the faculty pool for educational programs. In the long range goals developed by the APTA Board of Directors in 1986, the increased use of clinical specialists in the classroom was targeted as a means of meeting faculty demands. We are still in our infancy in the certifying of clinical specialists and using this process as a means of providing new faculty members. Making the certification process attractive to the clinicians, however, is a major challenge for all of us involved in promoting our special area of physical therapy practice.

Clinical Education

Clinical education is an integral part of a general professional education by enabling the student to apply the knowledge, skills, values, and attitudes that have been developed in the classroom in a problem solving situation. The clinical experience should also provide the student with the opportunity for professional role modeling.

In the past, clinical education patterns have centered around the use of part-time and full-time affiliations. These part-time affiliations were usually done with the student in the clinic for parts of each week. In a recent survey, Myers found that the patterns of clinical education may be changing with the part-time clinical education patterns of the past being replaced by short

multiple blocks of one to four weeks.[6] This trend appears to be occurring because of the desire of clinical educators to have students for longer blocks of time in order to accomplish the goals and objectives of clinical education. As a means of achieving professional socialization earlier and to be more complete in reaching the goals and objectives of the affiliation,[6] full time affiliation blocks appear to be lengthening from the traditional six weeks to eight to ten weeks in many programs. Another change in clinical education was reported to be in the type of facilities used. Students are now being educated in private physical therapy offices, sports physical therapy centers, home health agencies, hospitals and rehabilitation centers. Interestingly, the survey showed that 100% of the physical therapy programs surveyed use pediatric inpatient and outpatient facilities in the clinical education program.[6] Eighty- six percent of the programs report using the school setting as a clinical facility. We have access to a number of students during clinical education but are we successfully recruiting them into pediatric practice? Are we being adequate professional models for students and are we professionally socializing students adequately? In a recent survey of clinical educators, Myers found that the mean age of of clinical educators was 34 years.[7] The average length of clinical experience before teaching their first student in the clinic was 3 years and the average number of years that the clinical educators had been teaching physical therapy students was 9.5 years. A large number of our clinical educators are young with little clinical experience prior to becoming involved in clinical education.

In the earlier Myers survey, clinical educators identified their personal development needs as (1) increasing competence in specialized physical therapy procedures, (2) increasing proficiency in structuring clinical education experiences for students, (3) expanding ability to design learning experiences for the professionalization of physical therapy students, (4) increasing proficiency in different methods of student evaluation, (5) increasing knowledge and proficiency of teaching strategies in the clinical setting, and (6) increasing knowledge and skill in clinical education program evaluation.[6] We have a responsibility within the educational programs to assist our clinical educators in reaching these goals if we expect the student to benefit as much as possible from the clinical education experience.

In addition to current patterns of clinical education, we must start preparing for clinical education for the postbaccalaureate degree program. We need to begin defining the pool of physical therapy clinical education sites needed for the changing degree programs and determining the length of the final full time affiliation. Currently, the majority of full time clinical education varies from 15 to 25 weeks but will this be adequate for the postbaccalaureate degree educational programs?

Practice

The changing health care system continues to provide for changes in the practice of physical therapy. Specifically in pediatrics, service delivery is being extended from large medical centers to the community, the educational environments (schools) and the home. Services are being provided through the public school systems because of federal legislation which mandates the provision of physical therapy for certain children. Additionally, types of children seen through the school programs have changed with the trend towards deinstitu-

tionalization of children with severe to profound handicaps. Physical therapy services in pediatrics now also focus on parental education and involvement due to the need for early identification and intervention.

All of these factors expand the knowledge base that entry level students must possess. No longer are new graduates being "tutored" by experienced therapists during their initial employment. Each year, faculties face the dilemma of what to include, what to emphasize, what to de-emphasize, and what to exclude in the curriculum in order to prepare the student for the potential employment situation of being the sole physical therapist. In physical therapy, however, we seem to have few deletions within the curriculum. Instead, we seem to be adding and adding to the burgeoning scope of content to be taught. The issue of extending the curriculum has to be addressed by all faculties and decisions must be made about appropriate course contents.

The methods and procedures used in physical therapy practice are also determinants that influence education. Competencies that are identified as advanced level competencies today may be the entry level competencies of tommorrow. In 1983, the Sections on Pediatrics and on Education of the APTA identified the general competencies in pediatrics that should be included in all entry level programs.[8] Table 1 is a compilation of these competencies. The sections also stated that "pediatrics can no longer be considered merely a specialty area in which a few physical therapists have had advanced training function. It is an integral part of basic physical therapy practice."[8] The document developed by the Sections also presented the philosophical statement that "rather than looking at pediatrics as a separate entity and isolated from general physical therapy practice, the modifications necessary for treating the pediatric population should be incorporated as a part of the basic principles which are the foundation for the entry level professional."[8]

Advanced level competencies have also been identified in the area of pediatrics [9] (Table 2). These competencies, however, were delineated in 1980. When the survey of practice in pediatrics is repeated within the next few years, the level of several of the competencies may change from advanced to entry level. If so, educational programs must include these new competencies into the ever expanding curriculum. This expansion of entry level expectations is also occurring in the other specialty areas of orthopedics, neurology, cardiopulmonary, electrophysiology, sports and geriatrics. How we deal with this expanding practice in the educational programs is a question that we must answer.

The delivery of physical therapy services has been alluded to previously in this paper. Physical therapists are not employed primarily in general acute hospitals in the same numbers as in the past. In the 1983 APTA active membership survey, only 42% of the respondents were employed in hospital settings compared to 47% in the 1978 survey.[10] Fifteen percent of the respondents were employed in private physical therapy offices, nine percent were employed in rehabilitation centers and five percent in public or non-public schools. Educational programs may need to provide more coursework in administration, supervision, and consultation with this change in delivery settings. Specifically in pediatrics, more coursework in consultation and education may be necessary if the new graduate is to effectively interact with teachers, parents, and other caregivers. In a recent survey of the 1984-1985 graduates of the University of Tennessee Program in Physical Therapy, many graduates reported that they would recommend more coursework in administration, supervision, reimbursement and consultation.

Independent practice presents another challenge for educational programs. Are our graduates adequately prepared to practice independently? If not, how can we modify the current curriculums to provide them with the necessary knowledge and skills needed for such practice? Singleton offers the following as suggestions for change in the curriculums if we are to educate the students who are prepared for indpendent practice:[11]

1. Increase the depth and level of all course content,
2. Place a greater emphasis on physiological and pathological bases of disease,
3. Emphasize the medical sciences,
4. Emphasize the medical sciences,
5. Increase emphasis on oral and written communication,
6. Incorporate more problem solving activities into all courses,
7. Integrate clinical education early in the program, and
8. Provide purposeful interactions of the students with members of other disciplines.

If these are the changes needed in our curriculums, we must begin to identify how the course contents can be changed given the constraints we now have on our programs. Additionally, we need to expand our faculties if we are to have the expertise to teach these new competencies to our students.

Conclusion

I have attempted to focus on the problems that we are facing in education that affect all areas of practice, not only pediatrics. We are in the process of change as a profession in many areas, education, research, administration and practice, and all of these areas affect each other. At this conference, we must try to identify these interrelationships and determine ways in which we can positively influence the future of pediatrics in physical therapy.

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APPENDIX 1

ENTRY LEVEL COMPETENCIES UNIQUE TO
PEDIATRIC PHYSICAL THERAPY*

Evaluation

1. Perform screening recognizing signification deviations from:

   a. the normal milestones for language, psychosocial, motor, perceptual and cognitive behavior
   b. the normal changes in physiology and structure that occur with growth and development

2. Perform a definitive evaluation recognizing deviations from the normal

   a. sequence of sensory-motor development to include
      (1) static and dynamic postures (including righting and equilibrium reactions)
      (2) movement patterns (reflex and/or controlled)
      (3) tone
      (4) processing of sensory stimuli
   b. range of strength, flexibility, cardiac function and respiratory function at specific ages

Program Planning

3. Consider when planning programs

   a. the total developmental or educational program
   b. the attention span of the child
   c. methods to motivate the child
   d. the incorporation of procedures into child care activities
   e. the long term care and financial burdens of the family

Implementation

4. Implement programs by

   a. interacting effectively with parents and education personnel
   b. maintaining interest and attention of the child
   c. utilizing play activities to achieve goals
   d. matching the appropriate stimulus to the child and the situation
   e. utilizing child care activities to achieve the goal
   f. providing consistent and constructive discipline when needed
   g. assisting parents to provide consistent and constructive discipline
   h. handling the child in an manner which provides optimum sensory input to obtain desired goals

Documentation

5. Incorporate physical therapy documentation into a total developmental or educational plan

* Pediatrics in Basic Physical Therapy Professional Education. Section on Pediatrics and Section on Education. American Physical Therapy Association, 1979.

APPENDIX 2

COMPETENCIES NECESSARY FOR ADVANCED CLINICAL
COMPETENCE IN PEDIATRIC PHYSICAL THERAPY PRACTICE*

Prevention

1. Design and Implement a Program for Prevention of Neuromusculoskeletal and Cardiopulmonary Dysfunction

Physical Examination

2. Design and Implement a Screening Program
3. Conduct a Pediatric Physical Therapy Examination
4. Conduct an Oral Motor Examination

Treatment Design and Modification

5. Design a Physical Therapy Pediatric Plan of Care
6. Modify Pediatric Physical Therapy Goals or Plans
7. Participate in Formulating an Individual Education Plan

Treatment Implementation

8. Design and Implement a Behavioral Intervention Program
9. Design and Manage a Program of Therapeutic Exercise
10. Design and Implement an Adaptive Equipment and Environmental Modification Program
11. Design and Manage an Oral Motor Treatment Plan

Consultation

12. Provide Consultative Services

Coordination

13. Coordinate Intra-agency and Inter-agency Resources

Research

14. Identify, Investigate, Report, and/or Publish on Current Problems in Pediatric Physical Therapy and Related Health Care Issues

Educational Services

15. Identify, Implement, and Evaluate Appropriate Educational Experiences for Staff, Students and Child/Family Situations

Administration

16. Plan, Implement, and Evaluate Administrative Components of the Pediatric Physical Therapy Specialty Services

* Physical Therapy Advanced Clinical Competencies. Board for Certification of Advanced Clinical Competence and Pediatric Specialty Council, 1985

Group Discussion of Issues in Education

1. Education of the Generalist PT in Pediatrics:

   a. Do we have any data on the number of hours of pediatric content in the various educational programs?
   b. What are the competencies in pediatrics needed by the generalist PT upon graduation? Can we expect entry level people to be competent in pediatrics?
   c. Generalist needs broader knowledge of pediatrics than just CNS dysfunction
   d. People in private practice are getting into pediatrics via contracts; these people may not be well-prepared for pediatric practice, and, in fact, may not be particularly interested in it.
   e. Need to integrate pediatric content into all coursework
   f. Will the increase in men in educational administration adversely affect the amount of pediatric emphasis in the curricula?
   g. Programs need to have at least one pediatric faculty member.

2. Pediatric Faculty Recruitment and Development:

   a. Is it realistic to expect faculty to be expert clinicians, researchers and teachers?
   b. The new standards require competency in two of those three areas; yet university professors are often promoted and tenured on the basis of research and teaching only. The university professor's roles are to discover and to disseminate knowledge. That is a dilemma which faces professional programs within universities.
   c. The person who tries to be all 3 will probably either burn out quickly or spread himself too thin to be able to do an adequate job in any area. This person will not be a good role model.
   d. As the number of entry level programs increase, each one has access to fewer pediatric faculty, and more community-based people are being used to teach pediatric material.
   e. Pediatric faculty who have gone into administrative positions must be sure that their administration duties do not keep them from continuing their teaching and/or research in pediatrics. We have a lot to gain also from pediatric persons moving into administration to act as advocates for pediatrics in the educational programs.
   f. If we have a goal of having one pediatric person on each program's faculty, this becomes a problem if you are also trying to establish a research group which will have similar interests.
   g. Programs cannot have advanced graduate programs in all areas of PT; they must select ones on which they will concentrate and hire additional faculty for those areas.

3. Faculty Clinical Practices:

   a. Many faculty are "moonlighting" in clinical practices, presumably supplementing their incomes. Although this is good for keeping up clinical skills, it is not meeting the need of being role models for students, nor is it a way to build faculty financial resources. It may also be taking people away from research.
   b. Some universities are using faculty practices, not to supplement income but to actually pay faculty salaries. Faculty member has no choice but to work in the faculty practice.
   c. Faculty interested in acute care cannot practice in this area via faculty practices and must find outside sites to meet clinical needs.

THE PRACTICE OF PHYSICAL THERAPY WITH CHILDREN, ADOLESCENTS AND THEIR FAMILIES

Alice M. Shea, PT, MPH

The practice of physical therapy with children, adolescents, and their families has been occurring in this country since early in this century. Elements of this practice, not named physical therapy as such, have been in existence long before that as part of early medicine. Documentation exists which describes therapeutic activities in the lateral curvation clinic and in the neurology clinic as early as 1898 at Children's Hospital in Boston. In 1911, a clinic was established to treat Infantile Paralysis which included treatment and parent education. The Department of Physical Therapeutics was established in 1914. The beginning of physical therapy as a profession occurred during World War I with the training of Reconstruction Aides to work with the men who were injured. The American Physical Therapy Association was established in 1921.

The committment in this country to maternal and child health was occurring during the same period of time. The foundation of the Children's Bureau in 1912, followed by three years the First White House Conference on Children.[1] The Shephard Towner Act in 1921 provided grants to states to develop health services for mothers and children. There were many individuals and groups, including the American Medical Association and the State of Massachusetts which opposed the bill as socialistic. These forces ultimately prevailed and the Shephard Towner Act lapsed in 1929. During the Depression, the states had reduced budgets for services for mothers and children and the Children's Bureau collected data and prepared a suggested plan for children's health and welfare programs which became the basis for the Social Security Act of 1935 which, in turn, included child health and crippled children's programs. In 1967, a reorganization of the Department of Health, Education and Welfare involved a splitting of the child health and welfare components of the Children's Bureau, and the formation of the Office of Child Development to handle the welfare component, with maternal and child health and crippled children's services under the Bureau of Community Health Services. The support from the Division of Maternal and Child Health Services for physical therapy graduate and continuing education and for interdisciplinary training has affected the profession in very positive ways which will be discussed in later parts of this paper.

Early Practice

During the first two to three decades of physical therapy practice, treatment was done, in most instances, under the aegis of orthopaedic surgeons, or neurologists, later with referral from physicians specializing in physical medicine. In the fifties, physical therapists began to work with children who were being treated by a wider variety of medical practitioners. This was the period when therapists in this country began to do respiratory work with patients who had cardiac surgery, cystic fibrosis, asthma and other disorders. Training for the therapists came initially from physiotherapists trained in Great Britain. As this occurred, therapists became involved in the treatment of other acute and chronic illnesses in addition to those leading to physical disability in the traditional sense.

Current Practice

Currently there are 44,100 physical therapists in this country. It is estimated that approximately 11% work with children under fifteen years with additional therapists working with older adolescents and young adults with developmental disabilities. Physical therapists presently treat children and youth with a wide variety of disorders of the nervous system, musculoskeletal problems, cardiopulmonary disorders, gastrointestinal problems leading to feeding disorders, motor developmental problems which may be related to any of the above, and learning disabilities. Space does not permit a listing of all disorders nor of all approaches to treatment. In general, a number of different techniques are utilized to treat movement problems, usually based on interpretation of neurophysiological principles. The most frequently utilized of these is undoubtedly the neurodevelopmental approach of the Bobaths. The techniques of Margaret Rood incorporating the effects of sensory factors on movement as well as the proprioceptive neuromuscular facilitation of Knott and Voss are also used. The testing and approach to learning problems of Dr. Jean Ayres, Sensorimotor Integration, is frequently used in school programs by therapists who have had this training.

Evaluation of muscle strength and joint range of motion is not really different in form than what is used with adults, but the approach must always consider the developmental level of the child. Tests of sensory function and motor development become important as do tests of reflexes and postural reactions. The motor tests of Bayley,[2] the Peabody Developmental Motor Scales[3] and the Gesell[4] are probably most commonly used, but physical therapists are beginning to develop their own testing which also incorporates assessment of the components of movement problems like the Movement Assessment of Infants.[5] Research studies are utilizing the techniques and instrumentation of biomedical engineering to quantify measurement, but at this time these are not being utilized clinically for children to any great extent except for gait studies.

Physical therapists who work in acute settings, are now involved to a greater extent in intensive care situations, not only the neonatal intensive care unit, but other medical and surgical units and are becoming increasingly sophisticated about the technology of these settings.

In recent years therapists have become involved in design of adaptive seating and decisions about mobility for children who are not able to walk, with the ultimate goal of independence of the child as early as possible in his life.

Consultation has assumed a more important role in physical therapy practice and therapists are called upon for opinions in many settings.

Changes in Practice Environments

Rather remarkable changes have occurred in the last two decades which have affected the lives of children with long term health care needs in very significant ways and concurrently have affected the delivery of physical therapy services. The earlier settings for practice had been clinics, hospitals and rehabilitation centers but the advent of PL 94-142 in 1977 has radically changed the service pattern. Concurrently the move to deinstitutionalization has resulted in many more children and adults with severe disabilities in the community. The settings for practice, in a survey by Long[6] (Table), indicate that the largest percentage of therapists working in the field of pediatrics are employed in public schools.[6] Prior to the law, only a small percentage of therapists worked in schools, and then usually in special schools for children with handicaps. Their practice was different from what is presently happening since the emphasis was on special services rather than on integration into regular education.

Practice in public schools. Even though practice in the public schools is not uncomplicated, we are fortunate as a discipline to have been there from the beginning of implementation. The move from the medical model to the educational model would have been more difficult if most other disciplines had been in place and functioning before we appeared on the scene, since one of the most important components of functioning in the school situation is that of team planning for children.

Practice in school systems takes many different forms. It is different in different states and even in different areas of the same state. People are employed by individual school systems, groups of school systems, by states, private practices, home health agencies and hospitals which have contractual agreements with schools. In our state, physical therapists may be responsible to another physical therapist, but more likely to a director of special education or to a nurse as the person responsible for health services in the school. These situations have a definite effect on what happens in terms of practice in the school. This is particularly true in the instance of therapists who have no previous clinical experience and may have no access to a supervisor or a peer of any level. The therapist-student ratio is obviously another important factor.

A very important, but unanswered question is that of physical therapy which is educationally relevant. Obviously the answer is different for different children but we have as yet had no clear guidelines. The types of services delivered in the school may include direct services; consultation with teachers, physical educators, parents and others; inservice education and parent teaching. Communicative ability, while important in all types of physical therapy, is pivotal to the school situation. Communication with other disciplines in the school as well as with physicians can affect the child's program to a great extent. The question of the child's primary therapist is an important one. Does the answer depend on what type of program is carried out in school? Does it depend on who talks to the child's parents more or who has known them longest? Is it the therapist who communicates with the doctor? Does the physical therapist at school want to be the primary therapist? Should there be a primary therapist?

TABLE

EMPLOYMENT SITES OF PEDIATRIC PHYSICAL THERAPISTS

LONG (1986)[6] n = 250

PUBLIC SCHOOL	42.0%
PRIVATE PRACTICE	30.0%
HOSPITAL	18.0%
OUT-PATIENT CLINIC	11.0%
HOME HEALTH	8.8%
UNIVERSITY	6.3%

Physical therapy practice in school provides the opportunity to learn much more about the everyday life of children than can ever be learned in the clinic. Functional abilities become very visible and planning for adaptive equipment needs is important. Judgment, usually based upon experience, is needed to make decisions about which children will have physical therapy, the way it will be delivered and its frequency. These sometimes are the most difficult decisions to make because there are very few if any guidelines in print and because pressures are brought to bear in some situations.

Physical therapists have been involved for many years in scoliosis screening programs in schools, and in some developmental screening programs, but there has not been a great deal of activity in other forms of prevention. At present there seems to be more than enough to do for children with special needs and a shortage of therapists to fill the available positions. The future will hopefully bring additional preventive efforts.

Private practice. Long's survey[6] indicates that there is also a trend among physical therapists working with children to go into private practice. This mode of practice is particularly appealing to the physical therapist who wants to work part-time and who wants to arrange his or her own schedule. It is also chosen by the person who does not enjoy the constraints of institutional practice, but perhaps, on a part-time basis, can maintain a link to it. Many therapists are also not hired on a full-time basis for projects and need to supplement their income.

The advantages of private practice in addition to the economic benefit, include the opportunity to see children in their homes in a relatively relaxed situation. The disadvantages include moving away from the team approach (if the child needs that kind of approach) and the fact that private practices, as a rule, include few low income children. Therapists in private practice will frequently arrange for team meetings or will make efforts to attend them. Some physical therapists have spoken of practicing in the same area as occupational and speech therapists and pediatricians, not necessarily in a group practice but for the purpose of working as a team. Whether such groups actually exist is not known. Part and parcel of a private practice, of course, is a knowledge of business procedures and documentation. In addition, the reponsibility for one's own continuing education and peer review must be taken.

The Role of Parents and Children

What about the role of parents in our practice? I remember thinking, a long time ago, about the importance of early treatment, particularly in instances where the child was known to have cerebral palsy. I felt that if those pediatricians would only send the children to us early, we would certainly be able to help them more and their parents would certainly welcome the assistance. I had no appreciation of the need for acceptance of the problem by the parents in order for them to proceed to the next step.

We frequently ask parents to participate in their child's program by doing home programs. The parents of a child with cerebral palsy are a good example. We, however, really do not have good evidence of their compliance, or sometimes what they really think about doing what we ask of them. Two of our graduate students sought to evaluate compliance using interviews and questionnaires

with parents of children with cerebral palsy.[7,8] We should note that the validity of the studies could be called into question because the parents knew that physical therapists were doing the research, however these were not the therapists who were working with the children. A moderate correlation was found between parents' knowledge of the child's disability, knowledge of treatment goals and compliance. Compliance was also related to the degree to which treatment goals were achieved. This knowledge of goals has been mentioned by parents as one of the strong points of the Doman approach to treatment. Parents feel more comfortable with doing activities if they do not have uncertainty about the end point of their efforts.

We need to gather more information on compliance as well as on parents' opinions about doing home programs. It will take larger samples with interviewers from outside the profession. Parents are spending a great deal of time and effort but what happens after they get it? We are spending a lot of time, too. Are there better methods of teaching? Are we asking too much of parents?

One approach we have used for parent education has been a series of group sessions in the evening which fathers attended as well as mothers. We talked about the rationale for physical and occupational therapy and suggested questions which could be asked of physical therapists and others. An orthopaedic surgeon and a pediatric neurologist participated as well. All of the sessions engendered a lot of questions and discussion.

It seems important to say a few words about children in the decision-making process. Adults with disabilities have become increasingly vocal in speaking for their rights, but children have been heard from only sparingly. Even though many adults who have disabilities have come from a lifetime of ministrations by health care professionals, it is not quite the same as hearing from people who are now experiencing the system. The system itself of course is also different now than in past decades. Tompkins[9] notes that children who are the potential beneficiaries or victims of alternative actions, cannot vocalize their needs. The validity of actions taken on their behalf is seldom questioned.[9]

A group of young adults with cerebral palsy were given the opportunity, by physicians in the Academy of Cerebral Palsy in 1971[10] to talk about many issues including schooling and the physical therapy they had received.[10] They were concerned about the amount of time that physical therapy had taken from their academic work (they were college graduates) and also about the quest of the physical therapist (in their interpretation) for normality of movement. They felt that the quest was bound to be unsuccessful, and led to undue focus on their disabilities. These people were then in their twenties and thirties and approaches have changed since their school days, but it still gives us pause. How much more difficult it is for the child who is retarded to express such an opinion, even though he may be experiencing the same feelings. The people who are in the best possible decision-making position of course are the infants who can simply and effectively scream their disapproval and in the process get a lot of attention.

We need to ask children more questions and when possible let them plan goals with us more frequently than we do. If our goals are related to functional abilities, this kind of planning must occur. Infants attend family conferences because they <u>cannot</u> understand. We need to invite them as they grow older because they <u>can</u> understand.

Participation in Interdisciplinary Teams

Training programs in public health, some supported by the Division of Maternal and Child Health are an excellent example of interdisciplinary education. In such an atmosphere, more than any other of which I am aware, the realization of the contribution of each health discipline is made very clear in both formal and informal discussions. The interdisciplinary training programs of the University Affiliated Programs are the best clinical programs in my experience because of their emphasis on the whole child and his family.

One of the hidden dangers of the interdisciplinary approach is that representatives of disciplines, particulary if they are the sole representatives, can become mesmerized by the importance of their own pronouncements which are unique to the team perhaps, but not necessarily unique to other physical therapists. It is very important to work out a way of keeping current with one's peers and with professional developments. The balance between remaining a capable disciplinarian and a person who can speak knowledgeably to parents about a variety of topics is sometimes difficult to maintain. Being part of a team, however, helps to underline the expertise of individual disciplines and makes one reluctant to espouse an approach to care which is transdisciplinary. At the same time, we need to learn about more ways to use our increasingly limited resources. We will probably not have as much opportunity for discussion with one another as we had in the past, but hopefully we can learn to use the available time more fruitfully.

Developments in the Physical Therapy Profession

One of the most important recent developments for physical therapists who work with children has been the organization of the Section on Pediatrics more than a decade ago. The Section has provided a forum for ideas, and its publication, Totline, provides a chronicle of the growth of our practice.

Clinical Specialization in Pediatrics. Clinical specialization in physical therapy was approved in 1976. The first examination for pediatric specialization occurred in February 1986. Four persons have been certified and it is expected that the yearly number will gradually increase as more individuals become involved in the process. The requirements include documentation of clinical experience with children and of participation in research, administration and education as well as a written examination. Specialization is voluntary and is meant to signify an advanced level of clinical skills. One of the goals is to recognize outstanding clinicians who may or may not have advanced academic degrees.

Whether specialization will eventually have an effect on employment practices, in the way that neurodevelopmental treatment (NDT) certification does now is unknown. There has not been a guideline for consumers to use in deciding about expertise of individuals, but perhaps there will be one now. It will, however, be several more years before there will be much visible evidence of the effect of specialization.

Independent Practice in Physical Therapy. A motion designating the physical therapist as the entry point in the health care system, for evaluation, treatment, and prevention was approved at the 1981 House of Delegates of the

American Physical Therapy Association. The information for implementation was published in 1985. Independent practice, as it has become known, has been approved in eleven states and by the United States Army. Physical therapists working in public schools, particularly those working with children with learning disabilities, have welcomed this approach, particularly because of their difficulty (at times) in obtaining referrals from physicians.

Probably because of very limited experience with this new form of practice, there is minimal information available about its effects. In our state, even though the legislation has been passed, third party reimbursement continues to require referral from a physician. The Joint Commission on Accreditation of Hospitals also continues to have this requirement. What will happen in the future cannot be predicted.

Dr. Mary Clyde Singleton,[11] in an address to the North Carolina Chapter of APTA, suggested that changes in our educational programs may be necessary before new graduates are ready to practice independently, viz. greater emphasis on problem solving, assessment and medical science courses. She also noted that a period of supervised clinical internship may be important to prepare the therapist for this level of practice.

In addition to the above, there is also the importance of good communication between physical therapist and physician with or without the referral process. This communication should be written if at all possible, and become a part of the child's record. This is particularly important in the case of infants who do not have a firm diagnosis. Parents may easily become confused in the process of questioning both doctor and therapist. Obviously this type of situation lends itself to miscommunication in any event, but both therapist and physician must try in every way to avoid it. Other considerations are similar to private practice, viz. careful documentation and judgment about when to refer to another practitioner or to discontinue treatment are important, as are issues of liability.

Accountability and Cost Containment

The present era of cost containment in health care has many implications for physical therapists in all areas of practice. The effects are being felt in adult services through limitations in length of hospital stay and restrictions on home health care for patients on Medicare particularly. Diagnosis Related Groups (DRGs) are the mechanisms for prospective payment for in-patient stays. Many states also have cost containment legislation which results in decreased length of hospital stay and affects children as well as adults. Children's DRGs (CDRGs) are in the process of review in various areas of the country.

Because length of hospital stay has decreased, services for children have changed both in in-patient and community programs. Children, when possible, are now given pre-admission preparation as out-patients, so that pre-operative teaching, for example, is now limited or not possible at all. Children with complex problems are now being discharged at an earlier stage. Given a short period of time for evaluation and planning, the physical therapist must have a higher degree of judgment and skill than previously. There is less opportunity for teaching students who are in the early stages of their clinical training in the acute care setting.

In the community, the children come home in a more fragile state, and frequently have very elaborate technological support. Even though these children with very complex problems represent a small percentage of the children we treat, they represent a very large time committment. They often have very involved respiratory and feeding problems. The early stages of their programs, previously carried out in the hospital, must be transferred to homes and later to the school, because their problems are long-term. The need for good communication between hospital and community is evident. The possibility of overwhelming the families of these children with too many support services is, in some instances, a real concern just because we do not yet have enough knowledge of their individual needs. We must be careful not to add to their problems by having multiple therapists involved with the child e.g., hospital, community and school therapists simultaneously. What is important is that we provide good transitions and consult with one another more rather than seeing the child numerous times.

Health maintenance organizations and some fiscal intermediaries are requiring us to justify evaluation and treatment, but this is not a requirement in other forms of care. Fairly soon, however, we are going to be asked to justify what we are doing and to examine its cost-effectiveness. Additionally we know that parents of children with disabilities pay 15 to 20% of the total cost of care for non-institutionalized disabled children.[13] Nationally, Medicaid covers only 15% of all disabled children who are living at poverty levels.[14]

Another area of concern is that of frequency of treatment. Do we really know or can we document the need to see children once or twice a week or, in the hospital, two or three times a day. Most of the time we would find this very difficult. We are also asking the parents, in some instances, to bring the child to us, and are also asking them and the child to set aside a certain amount of time each day. We do not really know, as far as I am aware, on what basis we make these decisions.

Linked with questions of frequency are the very important questions about efficacy. As has been stated at this conference, there is a paucity of evidence of efficacy of physical therapy procedures. This is particularly true in the case of physical therapy for children, when the effects of growth and development must also be considered. Decisions about efficacy, in part, would help us to decide about which children we should be treating, how often, and at what age. Efficacy is also related to goals of treatment. In treating the child with cerebral palsy, are we aiming for function alone, quality of function, quality of movement or all of the above? Dr. Martin Bax[12] recently suggested that the outcomes which we should expect from treatment of children with cerebral palsy are: prevention of secondary problems, e.g., contractures, and easier ways of handling and feeding the child for the parents. Do we currently have the evidence to disprove this statement or to prove it?

To answer some of our own questions we must study treatment and its goals. We know now that, in the case of children with cerebral palsy or Down Syndrome, developmental testing is not sensitive to our treatment goals. We will need help from the researchers who are trained in the techniques of neurophysiology and in bioengineering, as well as a wider variety of other ways to measure movement, in order to answer our questions.

Considerations for the Future

The next few years will be important ones because of changes in the health care delivery system which will undoubtedly constrain our practice. The end result, however, may be that we will look a bit more carefully at questions of accountability than we have previously. One of the areas of research which should be implemented is that of investigating the natural history of the conditions we treat. This would not be an easy task, but may be possible if we were to combine our efforts in order to gather information longitudinally, if possible.

We will be recruiting people to work with children because we continue to have a shortage, but in doing this we must also examine preparation. Is post-baccaluareate entry level sufficient for this preparation or do we need more clinical training? The latter may be necessary because of the increasing complexity of practice and also because more people are practicing in isolated situations. If additional training is not possible, perhaps consideration could be given to mentorships or to creation of groups for discussion of clinical problems.

There continue to be gaps and at the same time duplications in services. This is true in the delivery of all health services, of course. There are children in some areas who are being seen by three different physical therapists, while many children who are poor, are receiving very minimal attention.

Case management continues to be a very important mechanism for parents of children who have multiple disabilities, and for the children themselves. While physical therapists are not usually named as functioning in that role, they frequently assume it. This type of coordination becomes important particularly for the child who is in foster care or in the process of adoption, and particularly in the case of young children whose parents are just becoming part of the system. Perhaps the role which therapists play in case management should become a more visible one.

Advocacy for children is another area in which physical therapists participate, literally every day, usually for individual children. We have participated only sparingly in a formal way, however, for children with disabilities as a group.

A last consideration is that of youth and young adults who have developmental disabilities. Physical therapists working in institutions have done a great deal to improve their care and have shown that improvements in function can occur at relatively older ages. Until the physical therapists who work with adults in the community have more experience with individuals with developmental disabilities, they are asking us to help them make the transition. In interviews, these therapists have said that they would be glad to have training in developmental disabilities. The adults themselves can help us a great deal to learn about goals of early treatment and its effects.

Although the present decade is characterized by reduction in funding for all health services, including physical therapy, there are also opportunities for development of our profession. These opportunities are open to us if we can achieve a clearer definition of our goals and the optimal ways of achieving them.

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Group Discussion of Issues in Practice

1. Transition to Adulthood:

   a. Effects of early intervention may be short-lived, but in some conditions (eg, Down Syndrome) changes can still be seen in teen-aged children. Perhaps we are overemphasizing the value of early intervention to the detriment of later intervention.

   b. Need sensitivity to adolescents' emotional needs, eg:

      1) gender of patient and therapists

      2) needs for activities to enhance both fitness and social lives, as disabled adolescents spend more time with families and less with peer groups than do their non-disabled peers.

      3) disabled teenagers have no peer group

      4) problem of patients becoming attached to professionals and some professionals may foster this.

      5) most important in intervention is to show that the child is valued as an individual.

   c. When do these people move to "adult" therapeutic programs?

      1) Most people with cystic fibrosis of all ages are still followed in children's hospitals by pediatricians

      2) Early intervention should include preparation for youth and adulthood (independent living, vocational planning, preparation of family)

2. Concept of Normalization vs. Enhancing Function

   a. All of our treatment is based on moving toward normality. Are we ready to give up on this and move toward remediation or decreasing dysfunction? Do we need to take another look at our philosophy of treatment?

   b. Working always for normality may have done us a disservice in terms of efficacy, outcomes of intervention.

   c. Is socialization really happening for disabled children mainstreamed into public schools? Or did they develop more of a peer group in special settings?

   d. Working for normalization may not always be inappropriate; there may be critical periods during intervention when it is an appropriate and attainable goal. Perhaps we should be reluctant to give that up quickly or easily or totally without careful evaluation. We may sometimes tend to role-release too much of physical therapy when it is not appropriate to do so.

3. Communication and Coordination of Services:

   a. In spite of manpower maldistributions and shortages, we still have duplication of services.

   b. Case management is needed to coordinate services (eg., one agency serves as manager)

   c. Some families know how to work the health care systems, but often low-income families can't manipulate the system and can't be adequate advocates for their children.

   d. Need for improved communications between therapists and physicians. Concerns about negative attitudes published in medical journals, challenges relative to accountablity.

   e. Seems to be real competition among health professions; protecting their turf; carving their niche. Have PTs set up disputes with physicians?

4. How long to treat:

   a. Therapists who work with very young children may be guilty of convincing parents of how important therapy is, then later another therapist gets the job of trying to convince them that the child doesn't need it anymore.

   b. Perhaps we should set short-term goals even with very young children and constantly re-evaluate (with the parents).

Group Discussion of Issues in Administration

Although no formal paper was presented on the topic of Issues in Administration, the symposium participants chose to identify and discuss some issues of concern in that area.

1. Recruitment, Orientation, and Retention of Staff

    a. Salary should be based on level of education, continuing education and certifications received.

    b. Even if we have a good salary to offer, recruitment is difficult.

    c. Orientation is necessary because we frequently must hire new graduates or therapists with little or no pediatric experience.

    d. Retention can be facilitated by supporting advanced educational opportunities and clinical research, and providing some sort of career ladder.

    e. Retention is a problem for a number of reasons including lack of a career ladder in many facilities (eg, public schools, early intervention programs).

    f. Several surveys have shown that retention is based on 1) location, 2) salary, 3) continuing education opportunities. Career mobility and graduate education were far down on the list.

    g. We need to increase numbers graduated, instead of trying to recruit the few pediatric therapists available.

2. Need to be Innovative with People who are Available:

    a. Use people who have withdrawn from practice.

    b. Job-sharing of part-time people (especially women with families).

    c. Refresher courses - retrain people for pediatric work. These may become more popular if continuing education becomes mandatory as evidence of continuing active practice. These can be self-supporting.

3. Overall Manpower Shortage:

    a. May need to change our recruitment philosophy to encourage people to enter the profession who are career-oriented.

    b. Get consumer groups (eg, hospital associations) to lobby the government for funds to expand educational programs. They can be more effective than professional groups, as they are experiencing the shortage.

    c. Congress tends to lump all health professions together; since there is no shortage of physicians, they assume there is no shortage of physical therapists.

    d. The ideal ratio of PTs/population is about 1/10,000 - only one state in the US even approaches that ratio.

4. Coordination of Services:

   a. In some communities there is competition among agencies wishing to serve the same children.

   b. Funding for various services is from a variety of sources and is a variety of types (fee-for-service, 3rd party payers, government programs, school systems, voluntary agencies).

   c. Educational vs. health-related services (the latter are not adequately funded; the former are expected to be sufficent, but are not)

   d. Parents seem to be expected to coordinate it all.

   e. Need to explore more innovative service-delivery models (eg, consultative model, intensive short-term blocks of therapy)

   f. Issue of infant educator - some are very good and we can release some roles to them; others do not seem to understand the need for therapy and may give families contradictory information about what programming the child needs.

   g. With education moving to serve younger age groups, educators may be making screening decisions in some local educational agencies as to who gets to evaluate children. Some will and some will not refer to PT. Will PT be able to evaluate and treat children without going through another discipline?

   h. Currently education has the funding and will be making the decisions. Need is for someone in a managerial role to oversee/coordinate health care needs. The medical profession has no input into rehabilitation programs for children.

5. Territoriality vs. Role Release:

   a. Should PTs, OTs and speech pathologists all be trained in the same courses (eg, as in NDT courses)? Does this contribute to people overstepping their bounds, both legally and ethically?

   b. Manpower shortage lends itself to letting others do physical therapy.

   c. There will always be some gray areas between disciplines (eg, will anyone be able to tell the difference between OT and PT in some pediatric settings?). We can work with other disciplines in these gray areas.

   d. Concept of the developmental therapist - we need to work with the whole child. Should all therapists be trained together? Will we eventually have this person? Or will the infant educator seize this role? Federal government is not interested in creating a new profession (eg, MR/DD specialist).

e. Look at the goals, not at what the therapist does. The goals should be unique to the profession. Or should all be working toward the same goals, have a patient plan, then decide who can best do each part of the plan?

f. Where this is most acute is where there is competition for funding - do we hire a PT or an OT?

6. Administrative Training for PTs:

a. Are PTs trained to be administrators? We often seem to fall into or are forced into administrative roles. Would we be better administrators if we had some training?

b. Is it a waste of talent for PTs to be going into administration? People who are trained to be researchers are often doing administration; also must at some point stop being a hands-on clinician.

c. Administration is a set of skills; we are not training people for administration as well as we should.

d. Administrators need to learn to delegate some of their administrative responsibilities or bargain with higher administration so they have some time to maintain their other interests.

e. We can't make competent administrators out of students in professional programs, but we can give them some basic understanding of the needs for administration and the need to prepare to move into administrative positions in order to have an impact on the profession.

f. Some people must have a natural talent for administration.

g. More students now are career-oriented and are, therefore, thinking more about advancing into teaching, research, and administration positions.

HIGH PRIORITY ISSUES IN

PEDIATRIC PHYSICAL THERAPY

HIGH PRIORITY ISSUES IN

PEDIATRIC PHYSICAL THERAPY

Following the formal presentations and group discussions of issues in the four major areas of administration, education, practice and research, participants engaged in a series of small group discussions during which they identified the issues and needs within each major area, then prioritized these issues and needs across the four major areas. As a result of these small group discussions the total group of participants came to a consensus on seven issues rated as highest priority needs both in overall importance to, and potential impact on, the profession of pediatric physical therapy. Data from a survey of practicing Pediatric Physical Therapists which were used by conference participants in developing these priorities are included in Appendix A.

MANPOWER SHORTAGE

Shortage of pediatric physical therapy manpower is evident in all areas of practice. Manpower needs must be identified and creative ways found to address the problem. We also need accurate data on personnel resources and a system for documenting and assessing future needs.

A. Recruitment/Students

1. Are applicants who express interest in pediatrics excluded from basic education programs? If so, this may be for a variety of reasons including: a) program cannot provide adequate pediatrics content, b) pediatrics is not highly valued, or c) the student is seen as being narrow in his or her understanding of physical therapy,

2. The educational programs may also exclude students who have potential for developing into scientists, teachers and administrators.

3. Need to identify students who have the skills, motivation and interest to go into advanced and specialized areas of practice.

4. Students should have an option, in entry level programs, to pursue special interests, such as pediatrics.

5. Increasing the number of physical therapy educational programs is not the answer to increasing the student body because there is also a faculty shortage. What is needed is more effective use of the existing programs.

B. 1. Increasing the pool of available clinicians may be the greatest manpower need, as these people would, eventually, fill manpower needs in the other areas (faculty, research, specialized practice).

2. Within physical therapy, we need to improve public relations efforts about pediatrics in order to attract clinicians into pediatric practice.

3. We also need to provide incentives to retain people in pediatric practice and to remain at one facility long enough to build a quality program.

4. Refresher and continuing education programs should be provided to reintroduce practitioners to pediatric practice and to train practitioners new to pediatric practice.

5. Should every physical therapy clinician be able to use problem-solving and basic expertise to treat children?

C. Faculty

1. In physical therapy there is a general faculty shortage; over and above that is the shortage who teach pediatrics, and especially in pediatric specialty areas such as cardiopulmonary, or orthopedics and biomechanics.

2. Hiring pediatric faculty may be a low priority in entry level programs because of the need for faculty who can teach in more than one area, or because it is easy to bring in an outside (non-faculty) person to teach "the pediatric unit" in the curriculum.

3. Faculty retention. Are faculty development programs adequate to increase the capabilities of existing teachers? Do we lose faculty to the "publish or perish" expectations of some universities? Are salaries adequate to retain faculty?

4. Expectations of pediatrics faculty members may also contribute to faculty burn-out or a attrition. Is it neulistic to expect pediatric faculty to do "everything" (eg, teaching, research, clinical practice)? Does the pediatric faculty member have to continue to treat children in the clinic? Should we do more to legitimize (make attractive) other pediatric PT roles, in addition to the clinician role?

5. Pediatrics has been one of the driving forces in advanced masters level physical therapy education, but few of the strong pediatrics programs are actually training students for faculty and clinical teaching roles.

D. Scientists/Researchers/Administrators

1. We need increased numbers of scientists, scientific practitioners and administrators, in pediatric physical therapy.

2. Pediatric specialists need to be developed in the advanced educational programs.

IDENTIFICATION OF THE SCIENTIFIC BASIS OF PRACTICE: RESEARCH AND THEORY DEVELOPMENT

A. Theory Development:

Within physical therapy (as well as within pediatric physical therapy) there is a need to identify and develop a theoretical/philosophical basis for research, education and clinical practice.

1. We need to conceptualize and articulate theory (including re-examination of the assumptions and claims of practice, reaching a consensus on what we already know to be true, reviewing and modifying claims based on the established knowledge base, and differentiating between theoretical and treatment models).

2. Physical therapy (and pediatric PT) needs to identify its unique body of knowledge.

3. Do we lack a theroetical base, or are we just not in agreement about it?

B. Research:

1. Research is most critically needed in the following areas:

   a. Establishing a data base of the natural history of conditions commonly managed by pediatric physical therapists,

   b. Developing assessment methods,

   c. Determining treatment efficacy, and

   d. Examining the assumptions of current treatment approaches.

2. Need to identify, develop and teach appropriate designs for clinical research in pediatric physical therapy, for example:

   a. single subject designs (can address efficacy and accountability issues),

   b. cross sectional/longitudinal cohort designs,

   c. case studies (to generate research ideas),

   d. descriptive studies (natural history data, epidemiologic studies),

   e. literature searches/review articles (synthesis of research literature in a topical area), and

   f. group and collaborative designs, when possible.

3. Need to define research competencies needed at various educational levels:

a. entry level: critical consumers of the research literature

b. advanced masters level: participants in collaborative research and small-scale independent research

c. doctoral level: sophisticated independent research, direction of large scale and collaborative research projects.

4. Studies of the efficacy of treatment should:

a. measure functional change (as opposed to normal milestone achievement);

b. include measurement of relevant changes other than motor changes (eg, parent acceptance, improved client self-esteem, ease of management);

c. be used to determine what patients we should treat, for what purposes, for how long, when and by what means; and

d. investigate the concept of critical periods of normal development and critical periods for therapeutic intervention.

5. Research resources are needed

a. Seed and grant monies

b. Students and young researchers need to learn skills to negotiate for time, space and equipment to do research. They also need grantsmanship skills

c. Nurturing and socialization of researchers by administrators of clinical and academic programs

d. Traineeships for graduate students at masters and doctoral levels

6. Doctoral education

a. Do people who get a baccalaureate degree in PT but masters and doctoral degrees in other fields have difficulty going back to teach and conduct research in PT because their PT training is at an undergraduate level?

b. Are we losing people from PT because many get doctorates in other fields? Probably less now than in the past, as there are more graduate programs where they can use their talents with PT students. We need to track doctoral people better.

c. Doctorates in other fields may enrich PT programs, but may also dilute the profession in some ways.

d. Research skills obtained in doctoral programs are generic, and should be applicable to PT concerns.

TRANSLATION OF THE SCIENTIFIC BASIS INTO PRACTICE

Participants generally agreed that pediatric physical therapy practice needs to became more scientifically based, yet remain creative and sensitive. We do not want to lose the art of practice, nor throw out our caring, nurturing roles.

A. Collaboration between practictioners in clinical and academic settings is necessary in order to integrate new procedures/research findings/concepts into clinical practice.

   1. Development and fostering of the scientist practitioner to enhance the scientific approach to clinical decision-making.

   2. One role of the clinical specialist should be to apply research findings in the clinical setting, thus fostering the scientific approach to practice.

   3. Clinicians and researchers together should identify critical clinical questions to be addressed by research and inform funding agencies so these issues can be targeted for financial assistance.

   4. Pediatric PT administrators need to have a commitment to support and allocate resources to clinical research..

B. Clinical research strategies need to be developed.

   1. Standardized protocols for clinical data collection.

   2. Standardized assessment tools for functional evaluation and assessment of progress and outcome.

   3. Common terminology with the profession.

MEASUREMENT

A. Longitudinal data on normal and abnormal development on the natural history of conditions for which PT is commonly prescribed are needed to establish a data base for practice.

B. Measurement tools needed

   1. Identification of existing tools

   2. Development of new tools

   3. Standardization of evaluation methods and protocols.

C. Measures are also needed to:

   1. Evaluate efficacy of procedures,

2. Assess student performance, and

3. Assess patient compliance.

CURRICULUM

There is a need for a philosophy of physical therapy education which reflects the need to prepare students for their future roles as clinicians, teachers, researchers and administrators and to develop clinical decision-making (problem-solving) skills.

A. Entry Level Pediatric Education

1. Lack of theory and knowledge of treatment efficacy poses problems for developing the pediatric content of the curriculum.

2. The current accreditation standards state only that curricula must address "development"; this is the only reference to pediatrics. There is no requirement for any pediatric content beyond "development".

3. Teaching of problem-solving should receive more emphasis than teaching of techniques and treatment approaches.

4. New material needs to be added constantly and old material deleted.

5. Students need preparation for instructing clients, families and other professionals, and for the unique challenges of private practice.

6. Need to ascertain that basic competencies for pediatrics practice are covered in entry-level programs.

7. Clinical education in pediatric physical therapy should have as a goal exposing more students to pediatric practice during their clinical education.

   a. Should a pediatrics clinical education experience be mandatory? There may not be enough clinical education sites for those who choose pediatrics, let alone making it mandatory for all students.

   b. There is a need to develop more entry-level and advanced pediatric clinical education sites and also to determine how existing sites are being used.

   c. The impact of the proposed year-long internship must be examined. As proposed it will be in just one area - not likely to be in pediatrics. Perhaps it could be a rotating internship (based on the medical model) so as to include more pediatric experience (either within one center or at multiple sites).

   d. Pediatric clinical experiences need to be more well-rounded (eg, not all in acute care or in schools)

e. Students lose some direct patient care hours when affiliating in school programs (short school day, travel between schools).

f. Administrators must have a commitment to providing sites for clinical education, including consideration of legal issues, costs and benefits, and insurance needs.

B. Postgraduate Pediatrics Education

1. Continuing education is a strong need in order to maintain quality assurance.

a. Need to determine the types of knowledge needed and who should be responsible for delivering it (eg, perhaps the universities should be responsible for delivery of theory, new findings and the basis for application to practice; while clinical facilities and professional groups offer workshops in clinical applications and approaches).

b. Refresher education is needed to update skills of practicing therapists new to pediatrics or therapists returning to pediatric practice after a long absence.

c. Mentorship/supervision programs are needed to supervise new graduates and therapists re-entering field or new to pediatrics practice, especially in non-traditional settings.

d. Need to determine what types of continuing education programs will help practitioners to change or improve their practice (eg, long-term vs. short continuing education courses).

2. Advanced masters and doctoral education is increasingly needed to alleviate the shortage of qualified faculty and scientists.

a. What imput needs to go into advanced masters and doctoral programs? Should the profession develop voluntary guidelines for graduate programs even though they are accredited by other agencies or by individual universities?

b. A number of advanced programs have pediatric tracks. This may be because the pediatric content in basic programs is deficient.

C. Educational/Curriculum Models

Models are needed at all educational levels to serve as basis for the pediatrics curriculum at each educational level.

1. At the entry level (baccalaureate or masters) are we educating clinicians?, researchers?, teachers?, generalists?, specialists?

2. At masters level (entry level or advanced) are we educating advanced clinicians or developing researchers? How should (or does) the entry level masters program differ from the advanced masters program. How difficult is it for entry level masters graduates to enter doctoral programs?

3. At the doctoral level how does the professional doctorate (DPT) differ from the PhD?

4. Is there a need for interdisciplinary education (eg, PTs and OTs together) to make better use of scarce faculty and common need for certain core courses?

SPECTRUM OF PRACTICE

Participants were concerned about two major issues within this category: 1) defining the scope, or range, of the practice of pediatric physical therapy; and 2) defining the role of the pediatric physical therapist in a variety settings and in relationship to members of other professions.

A. Scope of Practice

1. Pediatric physical therapy must be defined as more then working with children with developmental disabilities and CNS dysfunction.

2. There is a need to decide who is responsible for former pediatric patients who are moving into adulthood. Is the pediatric physical therapist still responsible or should responsibility be shifted to therapists who treat adults. We need to allow the youth/adult to take responsibility for his or her own therapeutic needs and partic-pate in program-planning.

3. What can reasonably be expected of parents? Should we try to make them therapists or just teach them ways to handle their child? to what extent can we include the child in program-planning?

4. Increased physical therapist participation is needed in the organization and administration of PT services, especially in public schools and home health settings.

5. We must define <u>who and where</u> we treat (eg, ages, disabilities, diagnoses, severity, settings).

6. Within the wide scope of professional opportunities (research, administration, clinical practice, teaching), do we have to do everything?

7. We need to monitor current and future legislation which might limit the practice of pediatric physical therapy.

B. Role Delineation

1. The role of pediatric physical therapy needs to be defined in a number of relatively new practice areas such as preventive medicine, educational settings, early intervention programs and other interdisciplinary settings.

2. The unique responsibilities, contributions and goals of pediatric physical therapy, at least at a minimum level, need to be clearly articu-

lated, while areas of overlap with other professions are identified and acknowledged.

3. The responsibilities of pediatric physical therapists and occupational therapists particularly need to be delineated at local, state and national levels.

4. We need to determine when it is appropriate to release roles to others, and when it is not.

5. Role delineation is important to avoaid duplication of services.

COMMUNICATION AND COORDINATION OF SERVICES

Communication with other professionals and for the overall purposes of marketing and public relations and the issue of coordinating services to children and families were the two major issues in this category.

A. Communication

1. Improved communications are needed with other specialists, to improve the image we project and to articulate our claims for the benefits of physical therapy.

2. Communications should represent practice instead of personal views.

3. Improved written and oral communication skills are needed for publishing, grant-writing, teaching, advocacy, consulting, and negotiating.

4. Communication needs to be improved within the clinical, research, teaching and administrative components of our practice, as well as with other disciplines and constituencies.

B. Coordination of Services

1. A case manager approach is needed to improve coordination of services for children and families on all levels (intradisciplinary, interdepartmental and interagency).

2. Pediatric physical therapists can serve as advocates for children and families in such matters as assuring availability of services, access to services, environmental alterations, funding of services.

3. Coordination of services will help to avoid both duplication of services and gaps in services, especially when services are provided for the same child in a number of different settings (school, home, agency, hospital), and by different therapists.

4. Resources directories would be helpful to both therapists and families.

SHORT PRESENTATIONS

KEY AGENCY REPRESENTATIVES

SHORT PRESENTATIONS - KEY AGENCY REPRESENTATIVES

Following the consensus on priorities and prior to discussing strategies for addressing those priorities, several persons representing key agencies gave short presentations summarizing their agencies' roles in support of physical therapy in pediatrics.

James Papai, Director, Maternal and Child Health Training, Bureau of Health Care Delivery and Assistance, DHHS.

Background

Agency has supported training programs in physical therapy for over 20 years, though not in great numbers nor with vast amounts of money, but the support that has been given has been influential in helping to shape the course of the profession with regard to pediatric practice. The underlying assumption has been that this kind of support would result in enhanced services for the MCH population.

Reasons for Supporting this Conference

Mr. Papai's discomfort with being responsible for training programs in maternal and child health and not having a physical therapist as part of the consulting staff within the agency. He was also aware of changes going on within the profession and not knowing how the agency might fit in and of struggles going on within the profession as to where it was, where it was going, and how to get there. Two major aims for this conference were:

1. to help pediatric physical therapy, as a practice area, to come to some understanding, some sense of direction, and

2. from that to gain a better idea of where the agency could or should fit into the picture in terms of the support it might be able to give.

The MCH training programs has a number of attributes relating to the issues of this conference:

1. Fundamental is the concern for leadership training; it is not designed to train personnel for careers in direct (1 on 1) therapy.

2. Curricula should include aspects of developing leadership skills, administration and research awareness, and understanding of the complexities of the system and of the legislative basis for programming.

3. Expectations of scholarly activity on the part of training program faculty and students.

4. Strong commitment to the interdisciplinary training process.

Funding

MCH funds are divided: 85% are earmarked for the state Title V programs (basic MCH and Crippled Children's services). The remaining 15% is set aside for discretionary grants of regional and national significance. Within the discretionary grants category are the training programs (40%), including the university-affiliated programs which receive over half of the training funds. Eight percent of the discretionary grant money goes to the research program; the balance goes into a variety of discretionary grants for hemophilia diagnostic and treatment centers, state genetic services and sickle cell programs and other kinds of special projects-primarily service demonstration projects.

This year an additional $75 million was authorized (but not yet appropriated) for the MCH program. That supplement is distributed in the same way as the other funds (85% to states; 15% for discretionary grants). For the first three years of this authorization a certain percent must go for projects which develop homebased services for children with special needs and for the development of family care plans. This, along with the implementation of the new education law, should be of great interest to physical therapists who should be very much involved in what is happening with these two pieces of legislation. There is a lot of discretion as to what is done with the money, as to where it will be administered at the state level, what kinds of services will be funded, and who will be in charge. Professional groups need to be in on these things at the national level, but particularly now at the state level because this is where the current action will be.

Reorganization

MCH is being pulled out of the bureau in which it is now housed and put into another bureau in which it will become the dominent program. It will, in fact, be titled the Bureau of Maternal and Child Health and Resource Development. This should, ultimately give it more control over its own destiny.

Discretionary Grants

1. Long-term training programs: 5 categories are up for competitive renewal this year - social work, pediatric dentistry, speech pathology and audiology, occupational therapy and physical therapy.

2. Research program: has two competitive cycles each year and is available every year. Support is for applied, programmatic research. Deadlines are March 1 for June review and August 1 for November review.

3. Service demonstration grants:

4. Continuing education: will support workshops and conferences, development of standards of care; mostly one-time grants for some specific kind of program which ultimately will affect service delivery. Deadline is July 1.

Any program supported under the 15% discretionary category must, by law, be of regional and national significance.

Leon Sternfeld, M.D., Medical Director, United Cerebral Palsy Research and Educational Foundation.

Objectives of the Foundation: to develop and fund research designed to 1) prevent cerebral palsy and other developmental disabilities, and 2) improve the management, functioning, and quality of life of persons with developmental disabilities.

Types of Grants:

A. Research Grants: Must demonstrate relevance to cerebral palsy. Awarded from 1-3 years, renewable up to 5 years, up to $75,000, deadline March 1. Are primarily in biomedical and bioengineering areas, e.g., for gait analysis, applications of communications devices.

B. Professional Education Program: Clinical fellowships for post-speciality training (pediatrics, pedodontics, PM&R, orthopedic surgery, neurology, pediatric neurology, rehabilitation engineers, public health). Deadline is September 1.

   Mechanism: Application is made by a senior level staff person at a training center for a position (salary). If approved that person appoints the trainee. A physical therapist wanting postdoctoral training could be funded.

C. Graduate student stipends: Can apply for and be awarded at any time, up to $300/month for 2-4 months. Used for study beyond the required curriculum (eg, study or special project at another institution).

   Plans for Expansion: Developing an endowment fund of $25-30 million in order to expand both the research and professional education areas. Research plans include expanding into epidemiologic research, behavioral science research, service demonstrations, causative factors, genetic factors.

   An additional source of small research grants (seed money, $2500-3000) is the American Academy for Cerebral Palsy and Developmental Medicine.

Kim Feier, Associate Director for Federal Relations, Government Affairs Department, American Physical Therapy Association.

There is a major need for physical therapists to become more active advocates for children; through becoming better advocates for children, we will become more effective advocates for physical therapy.

Why is Advocacy Important?

Aside from the obvious humanitarian reasons for becoming advocates for children, these are some more "selfish" reasons. First is the issue of visibility. It will be helpful to pediatric physical therapy if we become identified in the minds of the public and the legislators as people who work with handicapped children. Second is the idea of strength in numbers. Physical therapists will never make up a large percentage of the health care professions. If we join with other advocacy/lobbying groups in coalitions, we may then receive help from other members of the coalition on issues important to our profession. An example of such a coalition is the Consortium for Citizens with Developmental Disabilities (CCDD) with which APTA works frequently. It is made up of about 60 consumer and provider groups.

Hints for Individuals to be Better Advocates

1. Find out who your legislators are, what committees they are on, ties to physical therapy, degree of involvement with health issues, ties to education.

2. If legislator is not involved with health issues, begin by educating him or her.

3. Make contact/meet with legislators and their staff. Do not insist on meeting the legislator; the staff can be extremely helpful as they are experts on many issues.

4. Also meet with legislators when they return to their districts (usually 1-2 times/month).

5. Invite legislators to district or chapter meetings, tour clinical facilities, take pictures with handicapped children for their public relations efforts.

6. Write letters about legislative concerns; personal letters have more impact than form letters; be very clear and concise.

7. Form advocacy coalition groups on the local level.

Rose Sgarlet-Myers, Associate Director of Research and Education, American Physical Therapy Association (APTA)

Review of Major Functions of APTA

A. Fostering research, education and practice through the outlets of:

1. Publications
2. Annual conferences
3. Developing guidelines and standards
4. Specialty boards

B. Setting Policy through the House of Delegates and the Board of Directors:

1. House of Delegates receives major input from Chapters and Sections

2. Board of Directors receives major input from committees, task forces, and APTA staff.

C. Advocacy: Interaction with other agencies and the government relative to the issues confronting the profession.

D. Funding: APTA does not directly fund all activities but, rather, is an influencing body for generating funds:

1. Public relations program makes the public aware of physical therapy; this will eventually have an effect on the funding of the things we do.

2. Fostering development of the Foundation for Physical Therapy to generate funds for physical therapy research.

Activities of APTA Relative to the Issues of this Conference

A. Manpower:

1. Clinical manpower: APTA is beginning a major project to collect data on PT manpower. Current data (based on licensure) is that there are about 65,000 practicing PTs in the country, about half of whom are active members of APTA.

2. Faculty manpower: Task Force on Faculty Shortage has studied this issue and made recommendations to the Board of Directors. A number of these recommendations are now incorporated with various APTA programs (eg, the Five Year Plan for raising entry level). It will be a while, however, before we will see real differences in the faculty pool.

B. Identification of the Scientific Basis of Practice:

1. Committee on Research - Plan to Foster Research has generated much activity. A current priority within this plan is to foster grass roots clinical research. A forum is planned for Annual Conference in 1987 entitled "Clinical Research: Barriers, Expectations and Rewards" at which clinicians doing clinical research will speak. These clinicians do not have doctoral degrees and are not affiliated with a university. The Plan to Foster Research also includes plans to foster theory and plans to foster measurement, among others.

2. Section on Pediatrics - Gives research grants (seed money - $1,000), was first section to give research awards to members, and recently began to give thesis and dissertation awards.

3. Five Year Plan for Raising Entry Level - Charges Committee on Research to look into establishing Centers for Clinical Research.

C. Translation of Scientific Basis into Practice

1. Publications, especially Physical Therapy.

2. Presentations at Annual Conferences and Combined Sections Meetings.

3. Contract to develop home study courses for physical therapists.

D. Measurement:

1. Foundation for Physical Therapy - second funding priority is measurement (first is efficacy studies).

2. Journal - publishing a special issue on measurement; measurement is a priority topic for publication.

3. Committee on Research - one of its 1987 goals is to explore development of a manual on standards of measurement in physical therapy.

E. Curriculum: Accreditation process

F. Spectrum of Practice: surveys of practice done by APTA and Sections.

Faculty Manpower: An example of how an APTA activity is generated, disseminated and implemented:

A. Generation - the Advisory Council on Physical Therapy Education recommended that the Board of Directors establish a Task Force on Faculty Shortage. The Task Force was established, met and worked over a two year period, then made its recommendations to the Board of Directors.

B. Dissemination - The recommendations were formulated into detailed program plans for effecting the changes. The plans are being implemented within a number of the association's programs (eg, the Five Year Plan for Raising Entry Level, Government Relations, publications, Public Relations).

C. Implementation - A number of activities have already been implemented as a result of the recommendations of the Task Force and the detailed program plans

1. Foundation for Physical Therapy - 1% of membership dues will be given to the Foundation for funding of doctoral traineeships; challenge grant for doctoral traineeships

2. Mary McMillan Scholarship Award - Two $5,000 grants each year are for doctoral trainees

3. Publication of a document on Planning a Doctoral Program.

D. Future Plans - In addition a number of other recommendations are in the Task Force Guidelines for Immediate Action which are being revised and will be sent to the Board of Directors in the fall of 1987. These include:

1. Sharing faculty positions and other resources,

2. Bringing in expert clinicians for teaching,

3. Programming for academic program directors on creating an environment to foster research and socialize faculty to the scholarly role,

4. Examination of admissions criteria to be sure we are not excluding future researchers and teachers in favor of clinicians,

5. More sabbaticals or visiting leaves for personal renewal of faculty,

6. Clinical scholars program,

7. Sharing students among the schools.

STRATEGIES FOR
IMPLEMENTING CHANGE

STRATEGIES FOR IMPLEMENTING CHANGE

The final sessions were devoted to developing strategies for implementing changes in the major areas of priority. These strategies were to be action-oriented and, when possible, to include appropriate persons, groups or agencies to be approached for assistance with implementation. Many of these recommendations will require the enlistment and cooperation of the APTA, the Sections on Pediatrics, Education and Administrative (APTA), funding agencies including the Foundation for Physical Therapy, other professional organizations like the Neurodevelopmental Treatment Association (NDTA), educational programs and the symposium participants themselves. A number of these activities have already been initiated but require continued support and follow up.

MANPOWER SHORTAGE

A. Strategies to alleviate the shortage of clinical practitioners in pediatric physical therapy.

1. Encourage physical therapy entry level educational programs to increase class sizes. This would increase the overall pool of physical therapists from which an increased number of pediatric physical therapists would come.

2. Encourage the educational programs to examine their admissions policies, procedures and criteria to be certain that persons expressing interest in pediatric practice are not screened out in favor of those expressing other practice preferences.

3. Encourage the APTA and educational programs to review recruitment materials to be sure that they reflect the role of pediatric practice within the profession.

4. Disseminate promotional materials to increase the awareness of pediatric physical therapy roles and settings to high school and college guidance programs.

5. Encourage the Section on Pediatrics to give high priority to implementing the recommendations of its Task Force on Recruitment and Retention.

6. Provide input into the new accreditation standards. A major concern was whether the suggested one year internship would include internships in specialized settings such as pediatric facilities. The accreditation standards will be presented at a number of hearings throughout the next year in a variety of geographic locations.

7. Collect data on the current status of pediatric physical therapy manpower. Some unanswered questions are: Are fewer people selecting pediatric practice now than in the past? Are problems such as low salaries or too large caseloads or changes in practice keeping people out of pediatric practice?

8. Encourage re-entry into the profession for those who have temporarily stopped practicing by offering refresher courses through the educational programs, clinical teaching centers, and free-standing groups.

B. Strategies to alleviate the shortage of faculty in pediatric physical therapy.

1. Encourage graduates of the advanced masters degree programs to teach in entry level programs.

   a. Academic administrators could encourage this by providing opportunities to teach while working on doctoral degrees.

   b. The faculty role can be made attractive to masters level clinicians through publications emphasizing the accomplishments of clinicians who have faculty responsibilities and providing mentors from the senior faculty.

   c. Post-masters degree educational experiences (eg, fellowships, traineeships) could be geared to preparing these persons for teaching roles.

2. Increase numbers of doctoral level pediatric faculty with the eventual aim of having at least one FTE in each entry level educational program.

3. Examine the report of the APTA Task Force on Faculty Shortage and detailed program descriptions and objectives to be sure that pediatric faculty needs are being met.

4. Conduct surveys of physical therapy education programs to collect and update data about pediatric faculty.

C. Strategies to alleviate the shortage of scientists in pediatric physical therapy.

1. Encourage full utilization of existing graduate programs with pediatrics speciality tracks. Programs could be listed in appropriate publications and careers of scientists in pediatric physical therapy could also be highlighted in these publications. Faculty of the graduate programs should be available at major conferences, continuing education programs and professional meetings to meet with prospective graduate students and publicize the pediatrics programs.

2. Commend the Section on Pediatrics research committee for its role in supporting the development of scientists through research awards and funding.

3. Commend the Foundation for Physical Therapy for its support of research and doctoral training.

D. Strategies to alleviate the shortage of administrators in pediatric physical therapy.

1. Encourage administrators to take generic coursework in administration through local educational institutions and short courses.

2. Conduct continuing education courses emphasizing administration and coordination problems unique to pediatric physical therapy.

IDENTIFICATION OF THE SCIENTIFIC BASIS OF PRACTICE: RESEARCH AND THEORY DEVELOPMENT

A. Support and foster faculty scientific inquiry and scholarship within the educational programs

1. Educate academic administrators in ways to foster and promote research.

2. Provide resources for faculty research including seed money, equipment, space, guidance in grant-writing, mentorship and faculty development programs, reduced teaching loads, and allowing leave for post-doctoral work.

3. Express and support need for pediatric physical therapy research at higher university levels. Physical therapy program directors, allied health deans and medical school deans could help with this through their contacts on university committees and task forces.

4. Create a critical mass of researchers through providing leaves and funding for collaborative efforts and publishing research interests of pediatric researchers inviting collaboration.

B. Host and support research-oriented workshops and conferences.

1. Conferences designed to identify research priorities. Some of their objectives would be to:

   a. develop a normative data base,

   b. study clinical research questions,

   c. identify parameters that indicate the effectiveness of treatment,

   d. identify paradigms for efficacy studies, and

   e. identify focused, directed research.

2. Conferences designed to reformulate theoretical approaches to treatment

C. Encourage research activities in pediatric physical therapy.

1. Encourage APTA to make research a high priority program emphasis.

2. Suggest that conference program committees not schedule research papers opposite invited speakers.

3. Suggest that Section on Pediatrics research committee follow research priorities in making awards.

4. Encourage pediatric physical therapists to support the APTA research program and the Foundation for Physical Therapy.

5. Sponsor workshops on grant writing.

6. Encourage researchers to serve as resource persons.

D. Encourage research and theory development through pediatric publications

1. Publish theory papers.

2. Publish thesis and dissertation abstracts.

3. Publish periodic reviews of research in a given topical area (eg, annual review of CP research).

TRANSLATION OF THE SCIENTIFIC BASIS INTO PRACTICE

A. Assist pediatric physical therapy clinicians to be good consumers of the results of research.

   1. Encourage clinicians to read and use the results of published research through journal clubs, special interest groups, case conferences, use of library resources for literature searches.

   2. Provide continuing education courses which emphasize the results of research and their application to practice.

   3. Use quality assurance, peer review and clinical research to translate knowledge into practice.

   4. Identify ways to provide access to the literature for rural physical therapists.

   5. Encourage clinicians to attend research presentations at state, section and national conferences.

B. Encourage clinicians to participate in clinical research.

   1. Provide clinical or adjunct faculty appointments to clinicians and staff appointments to faculty to link the clinical and academic settings.

   2. Provide technical assistance from the educational programs to the clinicians to promote the identification of research questions and the development of clinical research projects.

C. Provide continuing education to update physical therapy faculty on the recent research to assure that their teaching is up-to-date.

MEASUREMENT

A. Develop standardized measurement methods for pediatric physical therapy.

   1. Develop a data base management system for one or two key disability categories (eg, CP).

   2. Identify existing measurement tools via publications.

   3. Develop additional measurement tools in collaborative efforts with biomedical engineers, rehabilitation engineers, university groups.

   4. Develop standardized evaluation protocols for specific patient populations (eg, myelodysplasia, JRA, mental retardation, cardiopulmonary conditions, cerebral palsy).

B. Disseminate information about measurement.

   1. Communicate strategies for measurement.

   2. Submit a position statement on pediatric measurement to the journal special issue on measurement.

   3. Increase dissemination of knowledge about already developed measurement tools through publications and conferences.

   4. Commend the developers of the Movement Assessment of Infants (MAI) for their contribution to measurement. Recommend revision of the MAI Manual with regard to data now available on reliability and validity and appropriate uses of the tool.

CURRICULUM

A. Improve the pediatrics content of entry level educational programs through the administrators, faculty and curriculum planning groups of the educational programs.

1. Integrate pediatric and life span content throughout the didactic and clinical aspects of the curriculum, in addition to specialized pediatric courses.

2. Provide options in entry level programs to develop and pursue special areas of interest such as pediatrics.

3. Use specialized pediatric clinical sites for early clinical affiliations.

4. Convene the pediatric faculty every five years when competencies are reviewed to develop and update the pediatric core curriculum and allow subspecialty groups (eg, school therapists, infant therapists) to meet.

5. Address the new accreditation standards with regard to the pediatric and life span content in courses and the proposed one year internship via input at APTA hearings across the country.

6. Coordinate teaching in physical therapy and occupational therapy within universities that offer both programs. Teach basic sciences together, then applied pediatrics separately, but bringing students together to discuss their unique roles.

7. Expand the scope of the pediatrics curriculum beyond CNS disorders to include other areas (eg, JRA, hemophilia).

B. Increase pediatric faculty in entry level programs.

1. Encourage academic administrators to employ one full-time (or part-time) pediatric faculty member in each educational program to serve as a role model for students and to lobby for pediatrics in the curriculum.

2. Use clinical experts to teach specific pediatric topics.

3. Give clinicians teaching in academic programs adjunct (or clinical) faculty appointments.

4. Compile an on-going data base of pediatric faculty and what they are teaching to be used for networking.

5. Increase funding for pediatric faculty travel for continuing education, presentations at scientific conferences, collaborative research, and faculty exchanges.

C. Develop leadership in pediatric physical therapy within the graduate programs via the administrators, faculty and curriculum planning groups.

1. Include minor areas of emphasis within graduate curricula to meet needs for administrators, teachers, researchers and clinical specialists.

2. Disseminate ideas about educational models for graduate programs through publications.

3. Build "critical masses" of pediatric researchers within a few centers of excellence to stimulate research development.

D. Encourage on-going education in pediatric physical therapy through conferences and continuing education courses for clinicians and faculty.

SPECTRUM OF PRACTICE

A. Define the scope of practice in pediatric physical therapy.

1. Form a task force to define the scope of practice. The task force should have input into the APTA membership survey of practice and use as resources the Section on Pediatrics membership survey and the Pediatric Specialty Council survey of competencies.

2. Develop a position paper on treatment of cerebral palsy.

B. Open dialogue with other organizations.

1. With the American Occupational Therapy Association (AOTA), define the areas of pediatric practice unique to physical therapy and acknowledge the areas of overlap with occupational therapy.

2. With the Neurodevelopmental Therapy (NDT) Association, discuss concerns about lack of differentiation of roles in the training of physical therapists, occupational therapists and speech pathologists and the need to develop standardized measurement protocols for cerebral palsy.

C. Educate physical therapy and occupational therapy students together in basic science courses, separately in applied courses with joint seminars to discuss unique and shared roles.

COMMUNICATION AND COORDINATION

A. Provide continuing education on topics of communication, consultation, and coordination through:

   1. Presentations at conferences and meetings.

   2. Multidisciplinary workshops and seminars (including state agencies).

   3. Special journal series on communication and coordination.

   4. Writing workshops.

B. Encourage scientific publication and grant-writing through:

   1. Mentors for junior faculty in education progams

   2. Developing a nationwide network to review manuscripts for writers.

   3. Encouraging writing and oral skills throughout graduate and entry-level education programs (more essay tests, developing theses for publication, oral class presentations, oral thesis defenses).

C. Improve the coordination of services among providers of services to pediatric clients.

   1. Teach patient education and advocacy skills to providers

   2. Sponsor seminars where members of different disciplines can interact and discuss approaches to pediatric treatment.

   3. Adopt the case management model used by Medicare for the elderly (an agency in each county for coordinating case management) for use with pediatric clients.

   4. Instruct parents to be advocates and case managers for their children.

   5. Encourage practitioners to get onto local and state level planning committees and councils and onto boards of voluntary agencies.

D. Keep therapists informed of new legislation that affects clinical practice by means of:

   1. Fact sheets sent to state chapters, pediatric special interest groups, regional section representatives

   2. Publishing fact sheet information in regional, state and national newsletters

   3. Forming networks for dissemination of information which could also be used for coordination of services.

   4. Using regional section meetings for traveling programs for dissemination of legislative information as well as educational programs.

APPENDIX A

SURVEY OF PRACTICING PHYSICAL THERAPISTS

The final activity of this symposium was to assign a participant to oversee the implementation of the strategies suggested in each priority area. The assignments were as follows:

Manpower Shortage: Susan Effgen

Scientific Basis of Practice: Susan Harris

Translation of Scientific Basis into Practice: Carolyn Heriza

Measurement: Linda Fetters

Curriculum: Barbara Connolly

Spectrum of Practice: Tink Martin

Communication/Coordination: Darlene Slaton

A follow up progress report is planned for spring 1988.

PRIORITIES IN MATERNAL AND CHILD HEALTH

SURVEY OF PRACTICING PHYSICAL THERAPISTS

SUMMARY

The attached cover letter and survey instrument was sent to a sample of 201 pediatric physical therapists in December 1986. Eighty surveys were completed and returned (40%) by physical therapists across the country. The following is a summary of the important descriptive information about the sample and of these therapists' responses to the prioritization of issues for our consideration.

The Sample

* average of 10 years of experience in physical therapy with 7 years in pediatrics (range well distributed from 1 year to over 15 years)

* 75% report baccalaureate as highest academic degree

* 83% report primary role to be clinical practice

* 62% practice primary in urban or suburban settings, 30% in rural areas and 8% report both

* 38% are employed by public school systems, 19% by developmental centers, 17% by hospitals

* Most of the children treated by these therapists are between 1-3 years (31%) and 5-12 (33%) years old

* 70% report a primary service model of "direct treatment", 14% report "interdisciplinary", 9% consultation and 6% transdiciplinary

Prioritization of Issues

		% listed as # 1	% listed as # 2	% listed in top 5
A.	Health Promotion	10%	2%	43%
B.	Doctoral Education	-	1%	6%
C.	Coordination of Services	30%	9%	73%
D.	Manpower	-	6%	23%
E.	Advanced Technology	7%	10%	40%
F.	Masters Education	5%	5%	21%
G.	Clinical Research	18%	5%	50%
H.	Post Baccalaureate	1%	4%	7%
I.	Continuing Education	22%	21%	70%
J.	Interdisciplinary Service	5%	7%	40%
K.	Specialization	5%	5%	24%
L.	Assessment Tools	5%	21%	58%
M.	Community Based Care	1%	12%	26%
N.	Practice without Referral	2%	1%	20%
O.	Career Mobility	1%	1%	16%
P.	Funding for Research	-	7%	35%
Q.	Accountability	-	-	5%

COMMENTS

Written comments by survey respondents related to the need for:

insurance reimbursement for direct service and equipment

better role definitions in interdisciplinary service models

research documenting differences between direct service and consultation outcomes

NDT to be taught in entry level education

funding for therapy not provided by school system

clinical research especially related to early intervention

more quality continuing education

entry level education to include more pediatrics

demonstration projects to implement programs using treatment supported by research

standardized assessment tools

increased number of NDT courses

clear delineation of role of PT in the schools and consistency from one state to another and one LEA to another

increased availability of advanced masters programs

educational materials for physicians and educators

increased services in rural areas

specialization exams to be given locally

funding for early intervention programs

THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

The School of Medicine
Department of Medical Allied Health Professions
Division of Physical Therapy

The University of North Carolina at Chapel Hill
Medical School Wing E 222 H
Chapel Hill, N.C. 27514

December 1, 1986

Dear Colleague:

We need your help. You as a practicing therapist are the expert regarding current issues in pediatric physical therapy and we need your input and ideas for a project which may substantially influence funding of Maternal and Child Health programs in the next decade.

The Division of Physical Therapy at the University of North Carolina at Chapel Hill is hosting a symposium on priorities for future development of physical therapy in maternal and child health in January 1987. Representatives of the national leadership in pediatric physical therapy will participate in this symposium in order to discuss major issues in the areas of physical therapy practice, education, research, and administration. The symposium participants will develop goals and objectives for future action in these areas and recommend strategies for achieving identified goals.

In order to address the concerns of the pediatric physical therapy community at large, we are surveying a sample of pediatric physical therapists. The results of this survey will be shared with the conference participants so that key issues will be addressed during the symposium. The survey results will also be published in the conference proceedings and in Totline.

Enclosed is a list of issues which impact on pediatric physical therapy. Please take a few minutes to consider these issues and to complete the questionnaire. Please return this questionnaire in the enclosed envelope before December 20. Thank you for you contribution to this symposium. It's outcome will undoubtedly have a significant impact on the development of our profession.

Sincerely,

Carol Cochrane

Carol Cochrane, PT
Symposium Coordinator

Suzann K. Campbell

Suzann K. Campbell
Professor

Darlene J. Slaton

Darlene S. Slaton
Acting 149 Project Director

CC:kts

Enclosure

PRIORITIES IN MATERNAL AND CHILD HEALTH

SURVEY OF PRACTICING PHYSICAL THERAPISTS

Please identify the five items listed below which you believe represent the greatest needs in pediatric physical therapy today and in the future. Feel free to add to the list before choosing if you recognize other needs that are not listed. Rank the items you choose from 1 to 5 with 1 as the most urgent or important and 5 as less urgent or important.

A_____ Increased emphasis on health promotion, disease prevention and screening.

B_____ Increased availability of funding for doctoral level education for physical therapists.

C_____ Increased coordination of service delivery to children.

D_____ Increased numbers of entry level therapists to decrease manpower shortage.

E_____ Increased knowledge and use of advanced technology.

F_____ Increased availability and funding of masters level programs for physical therapists.

G_____ Increase in volume and quality of clinical research by physical therapists.

H_____ Establishment of post baccalureate entry level for the profession.

I_____ Increased availability of quality continuing education programs for clinicians.

J_____ Increased emphasis on interdisciplinary service.

K_____ Increased number of therapists certified as pediatric specialists.

L_____ Development of standardized assessment tools.

M_____ Increased availability of community based care in non-medical agencies.

N_____ Establishment of practice independent of practitioner referral.

O_____ Development of avenues for increased career mobility.

P_____ Increased availability of funding for research and clinical demonstration projects by physical therapists.

Q_____ Increased emphasis on accountability and ethics in health care.

R_____ other _____

Please use this space to further comment on what you believe should be priorities for funding in pediatric physical therapy over the next several years.

How many years have you have been a practicing physical therapist? _____

How many years of experience do you have in pediatric physical therapy?_____

In which state do you practice? _____

How would you classify your service areas (rural, urban, etc)? _____

_____

What is your highest academic degree? _____

What is your primary role?

_____ teaching
_____ clinical practice
_____ research
_____ administration
_____ other _____

In which type of setting are you employed?

_____ college or university
_____ hospital
_____ public school
_____ developmental center
_____ other _____

What is the age range of most of the children you treat?

_____ 0 - 1 year
_____ 1 - 3 years
_____ 3 - 5 years
_____ 5 - 12 years
_____ 12 - 21 years

If you are now practicing physical therapy, how would you classify your primary service model (direct care, consultation, interdisciplinary, transdisciplinary, etc)? _____

Thank you